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THE ADSORPTION OF SOAP ON THE SKIN.

ALASTAIR G. RAMSAY, B.Sc., M.S.,* AND KENNETH K. JONES, Ph.D.

The Departments of Physiology and Pharmacology, Northwestern University Medical School, Chicago, Illinois.

SOAP and water is the universal means of cleansing the skin, and the soap most commonly used is a mixture of sodium salts of the common fatty acids—stearic, palmitic, lauric, and oleic. Soap is a surface-active agent, concentrating in the surface layers of water solutions and in the films of water wetting the skin. This lowering of surface tension makes possible the formation of large numbers of small bubbles, commonly called lather. Surface-active agents are adsorbed on surfaces, especially if the surface carries an electrical charge opposite to that of the agent.

The cleansing action of soap, according to Kooyman and Halberstadt (1947), is due to the intimate contact the soap makes with the protein layers of the skin; the particles of dirt are thus displaced. Soap may also bring about solution of grease or oil and the particles of dirt, after change in polarity, are attracted to the colloidal soap micelles. Mechanical rubbing also plays a part in cleansing the skin. When the cleansing act is completed it is assumed that all the soap is removed from the skin by rinsing.

In the course of experiments on the formation and secretion of fat by the skin wide variations appeared in the amount and nature of the fat that could be obtained from the skin surface. It became evident that the manner of washing the skin was one important cause of this variation. It seemed possible that the duration of washing the skin and the type of cleanser affected the composition of the fat. Experiments were therefore carried out in an attempt to see whether soap was adsorbed on the skin in such a manner that it could not readily be removed.

METHODS.

Removal of fat samples from the skin.—Samples of fatty substances were obtained from the skin of the forearm using the technique described by Jones,

* Present Address: The Institute of Physiology, Glasgow University, Scotland.

Spencer and Sanchez (1951). A glass cylinder with an area of 3.14 sq. cm. was placed on the skin, and ethyl ether placed in the cup in contact with the skin for one minute; during this time the skin was rubbed with the smooth end of a glass rod. At the end of the minute the ether was removed and a fresh amount poured into the cup. Three such washings were united, filtered, and evaporated on the weighing pan of a micro-balance (Roller-Smith). The weighed fat was then dissolved in a known volume of petroleum ether and the area of spread determined by the monolayer method of Jones (1950), as modified by Jones *et al.* (1951).

A trough $6 \times 28 \times \frac{1}{2}$ in. is filled with distilled water. On the surface of this water is placed a small drop of "piston oil" which spreads over the water surface in a monomolecular film. This oil is made by heating a heavy mineral oil in a shallow dish at 300°C . for eight hours, and is called "piston oil" because the film it forms opposes other films with a constant pressure. The tension of the oil film is measured with a Cenco hydrophil balance and adjusted to a standard tension of 10 dynes per square centimetre. A measured aliquot (0.1 ml.) of the petroleum ether skin fat solution is then placed on the piston oil film. The ether evaporates and the fat spreads to a colourless monolayer film, the outline of which is distinct against the piston oil film.

The area over which the fat spreads against the constant piston oil film pressure is then traced on a glass plate, transferred to paper, and the area measured with a planimeter.

Cleansing routine.—Three methods of washing were tried: Firstly, washing with tap water alone, over a two-week period; secondly, also over a period of two weeks, washing with soap and water; thirdly washing with 95% ethanol over a period of one week. With either method, the right forearm was washed in a normal manner, rinsed and dried by blotting with fat-free towelling. The arm was washed three times daily and a sample of the skin fat obtained 1–2 hours after the third washing. The amount of fat and the ratio of weight to spread was measured. The ratio of the weight of fatty substance, in $\mu\text{g.}$, to the spread, in sq. in., is called the skin fat factor. From this factor the composition of the sample may be estimated.

RESULTS.

The amount and nature of the fat removed from the skin after washing with tap water alone, with soap and water, and with 95% ethanol are shown in Table I.

Comparison of the means of the skin fat factors shows that washing with soap and water lowered the factor significantly in comparison with the results from washing with water alone or with alcohol ($P < 0.01$). The factors after washing with water and with alcohol are not significantly different.

The material giving the low factor in the case of the soap-washed skin could have originated in the soap. Some of the soap was therefore dissolved in water and acidified with dilute sulphuric acid. This water emulsion of fatty acids

TABLE I.—*Skin Fat Factors with Various Washing Methods.*

Method.	No. of samples.	Mean amount of fat $\mu\text{g.}$ $\pm$ S.D.	Mean skin fat factors $\pm$ S.D.
Water washed . . .	15	192 ± 52	1.225 ± 0.03
Soap washed . . .	8	162 ± 92	0.931 ± 0.03
Alcohol washed . . .	6	157 ± 29	1.223 ± 0.05

was then extracted with petroleum ether, and a small amount of the extract evaporated in the same way on the micro-balance pan. This fatty acid mixture (400 $\mu\text{g.}$) gave a fatty acid factor of 0.74. A skin fat factor of 0.81, closely approaching this fatty acid factor from soap alone, was obtained from one test after washing the skin with soap.

Some factors for pure fatty acids were also determined and gave a factor of 0.887 for linoleic acid and 0.821 for oleic acid.

Since it thus seemed probable that a layer of soap adsorbed on the skin was being broken down to give a layer of free fatty acids on the skin, the following experiment was carried out.

Soap was made by neutralizing pure oleic acid with sodium hydroxide quantitatively and the forearm was washed with this soap in the manner previously described. The pH of the skin surface was then measured every five minutes until pH 5 was reached. This gave the time course of pH change shown in Table II.

TABLE II.—*Skin pH Change After Soap Washing.*

Time from washing in minutes:	0	5	10	15	20	25
pH	7.75	6.93	6.21	5.64	5.3	5.0

One hour after washing with the sodium oleate soap and rinsing with tap water a sample of skin fat was obtained. This sample gave a fat factor of 0.83, which corresponds very closely to that obtained from pure oleic acid mentioned above. This experiment was repeated using distilled water, very slightly acidified, instead of tap water. This gave a factor of 0.89.

DISCUSSION.

Since the film on the surface of the skin is normally acid (pH 3.5—5.0) soap cannot remain on the skin surface as such. Tests on normal individuals have shown that after being washed with soap, the skin remains alkaline for only 15–30 minutes (Table II). The soap that is present on the skin is now changed to free fatty acids plus some sodium salts of protein or of acids stronger than the fatty acids.

By the monolayer technique of estimating fat, the spread of a given amount of fat depends on the composition of the fat. Fatty acids, in the average relationship they have in normal tissue, have a spread of 1 sq. in. equivalent

to 0.88 micrograms (fat factor of 0.88). The fatty acids of soap have been found to have a factor of 0.74. Wax does not spread to a mono-molecular layer but forms layers of variable thickness dependent on the composition and manner of application to the water surface. The factor may vary from 2.5 to 4.0.

Triglycerides also tend to form multi-layers and, unless diluted with fatty acids, sterols, or other monofilm-forming lipids, will produce equivalent factors, depending on the way they are spread, varying from 1.0 to 1.5.

It has been shown that normal fat from the surface of the skin has a spreading factor of 1.2 (Jones, 1950) which is highly reproducible in the same individual and from one individual to another. Hence a variable factor must mean a variation in the composition of the skin fat. A factor below 1.0 indicates an increased amount of fatty acids, while a factor over 2.0 means an increase in the amount of triglycerides and waxes.

Kvorning (1952) collected the fatty substances from the skin 24 hours after washing with soap and water and compared this with the amount of fat from the same area four hours after ether washing. He found that the amount of lipid on the skin after cleansing with ether was only 69% of that after soap cleansing in men, and 73% in women. These results were given a different interpretation by Kvorning, but we feel that the larger amount of lipid on the skin after soap washing results from this adsorption layer of soap. It is very possible that this layer of fatty acid on the skin that comes from soap may have an effect on the well-being of the skin. Certain fatty acids could produce allergic reactions; others may be bacteriostatic or bacteriocidal and beneficial. Only further experimentation can say, but this possibility, which has been overlooked in the past, should be considered in the future.

SUMMARY AND CONCLUSIONS.

Cleansing with water alone or with alcohol results in no alteration in the normal lipid layer on the skin.

During normal cleansing with soap and water an adsorption layer of soap is formed on the skin. This soap layer is converted in the course of 25–60 minutes into a layer of free fatty acids which clings tenaciously to the skin.

This layer of fatty acid of variable composition may complicate and render inaccurate the estimation of fat on the skin.

The adsorbed fatty acids may have an effect on the well-being of the skin.

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THE STATE OF THE BLOOD VESSELS OF THE FACE IN ROSACEA—I

PETER BORRIE, M.A., M.D., M.R.C.P.

Dermatologist, Moorfields, Westminster and Central Eye Hospitals, London.

THE fundamental abnormality in cutaneous rosacea is a vasodilatation in the central area of the face, presenting as an increase in the depth of colour. Such a colour change is due to dilatation of the most superficial vessels, the non-muscular endothelial capillaries and venules (Lewis, 1927), with or without an accompanying dilatation of the arterioles (muscular vessels). It has not, as yet, been established which of these alternatives appertains in rosacea and it seemed logical to begin an investigation into the state of the blood vessels in this condition by attempting to define the exact anatomical site of the abnormality. The result of such an attempt is described in the present paper.

Cutaneous arteriolar dilatation results in an increase in blood flow, with a consequent rise in skin temperature. Neither of these effects follow a dilatation of the endothelial vessels alone. Although changes in blood flow are best measured by plethysmograph, the site affected by rosacea offers difficulties to this method, and in the present investigation changes in blood flow have been assessed by skin temperature measurements.

The state of the arterioles of the skin of the face was studied in this way in order to discover whether they are dilated in rosacea and whether they dilate to a greater degree than normal as a result of vasodilator stimuli.

METHOD.

Twenty-six patients suffering from rosacea and 26 normal controls were investigated. Each patient, clothed normally, lay on a couch in a quiet draught-free room of constant temperature. Skin temperature readings, at the six sites shown in Fig. 1, were recorded every 5 minutes by means of copper-constantan thermocouples. These sites were chosen because four of them (B, C, E and F) are usually affected in rosacea, whereas two (A and D) are spared. When the skin temperature had become constant, an ice-bag was applied to sites A, B, C and D for 5 minutes in half the patients, and the temperatures were recorded for a further 25 minutes. In the other half, an electric blanket, which had already been switched on for half-an-hour, was applied under two ordinary blankets, to the trunk and limbs for 30 minutes, temperature readings being continued.

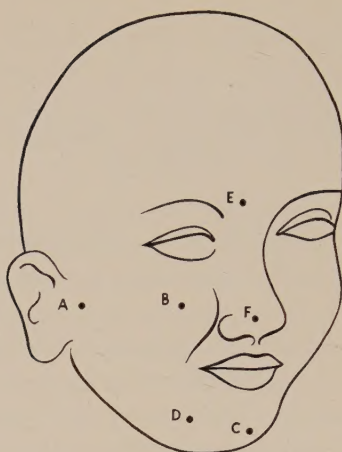


FIG. 1.

RESULTS.

The results of the experiment are shown in Tables I, II and III.

The average resting temperature was slightly higher in the rosacea group than in the control, both with regard to the rosaceous and non-rosaceous facial areas (Tables I and II). The fall in temperature during local cooling was less in the rosacea group, whereas the subsequent rise during the next 25 minutes was greater, with the exception, in the latter instance, of the non-rosacea site D (Table I). After heating the trunk and limbs for 30 minutes there was a greater rise of temperature in the rosacea group, with exception of sites E and F (Table II).

TABLE I.

	Rosacea		Controls.	
	Mean	Range.	Mean.	Range.
Age : Years	47	(25-75)	46	(33-77)
External temperature, °C. . . .	17.2	(13.1-19.5)	17.2	(11.5-20.0)
Initial temperature :				
Site A	30.3	(27.4-32.4)	30.5	(26.6-33.1)
" B	31.7	(26.5-35.1)	30.1	(25.0-33.6)
" C	31.3	(29.1-33.6)	30.3	(26.5-32.9)
" D	30.8	(27.9-32.0)	30.2	(26.9-33.0)
5 minute drop (° below initial) :				
Site A	8.7	(5.2-12.4)	10.0	(5.6-13.9)
" B	10.0	(6.4-14.6)	10.4	(6.6-15.3)
" C	11.1	(6.1-15.0)	11.4	(9.0-15.3)
" D	11.0	(7.5-15.0)	11.6	(8.6-14.9)
25 minute drop (° below initial) (negative quantities indicate that temperature rose above initial) :				
Site A	0.4	(-0.9-2.2)	1.0	(0-2.9)
" B	0.2	(-2.1-2.0)	0.8	(-0.3-2.5)
" C	-0.4	(-3.1-2.0)	0.3	(-0.6-1.1)
" D	0.5	(0-1.9)	0.3	(-1.0-1.2)

Temperature of the skin of the face of 13 rosacea patients and 13 controls following local cooling. Temperature recorded in degrees Centigrade.

TABLE II.

	Rosacea.		Controls.	
	Mean.	Range.	Mean.	Range.
Age : Years	50	(34-64)	44	(21-58)
External temperature, °C.	19.5	(17-21)	19.4	(17-21)
Initial temperature :				
Site A	31.8	(29.0-34.6)	31.3	(29.2-34.2)
" B	32.9	(29.4-35.3)	31.8	(29.0-34.5)
" C	32.8	(30.0-35.4)	32.3	(31.0-33.6)
" D	32.9	(31.0-34.5)	31.7	(30.5-33.7)
" E	33.5	(30.5-35.0)	33.3	(32.3-34.3)
" F	32.1	(29.7-35.2)	31.8	(29.6-33.5)
30 minute rise (° above initial) (negative quantities indicate that temperature fell in 30 minutes)				
Site A	1.3	(-1.4-4.0)	0.7	(-0.2-2.5)
" B	1.6	(0.4-4.4)	1.5	(0.5-3.2)
" C	1.8	(0.3-3.5)	1.7	(1.0-2.6)
" D	1.7	(0.2-3.2)	1.4	(0.7-2.1)
" E	0.6	(-0.4-1.6)	0.7	(0-1.5)
" F	1.1	(-1.5-7.2)	1.5	(0.3-3.3)

Temperature of the skin of the face in 13 rosacea patients and 13 controls, following heating the trunk and limbs.

Temperature recorded in degrees Centigrade.

TABLE III.

External temperature, °C.	18.0	18.0
Facial temperature :		
Site BR1	28.7	30.1
" BR2	29.2	29.4
" BL1	31.6	30.6
" BL2	30.2	30.2

Temperature of the skin of the face of a healthy woman aged 40. The period between the two sets of measurements was one week, in an inter-menstrual period.

BR1 and BR2 indicate 2 points, half-an-inch apart, at Site B (Fig. 1) on the right side of the face. BL1 and BL2 indicate identical points on the left side of the face.

The differences in temperature, however, were slight and statistical analysis revealed no significant difference either between the rosacea and control groups or between the various sites tested. This was because of the wide variation of skin temperature in different individuals, irrespective of which group they belonged to. Two of the factors which may play a part in causing this variation are shown in Table III. Two sites, half an inch apart on the cheek of a normal person, may vary in temperature by as much as 1.4° C. ; and identical sites on opposite cheeks by 2.9° C. Further, the temperature at one site may be found to vary by up to 1.4° C, when measured under identical conditions one week later. The colour of the skin, however, appeared to be exactly the same at all the sites and on both occasions.

DISCUSSION.

Measurement of skin temperature is an inexact method of assessing the blood flow and hence the state of the cutaneous arterioles. Nevertheless, infor-

mation of a comparative nature may be obtained from the present investigation. Although some evidence was found to show that the arterioles in rosacea are both more dilated at rest and possess a greater potential for further dilatation than normal, this evidence was not found to be statistically significant.

The accuracy of this statistical assessment is confirmed by the following three points, which also arose from the experiment: The greatest average difference in skin temperature at any site between rosacea subjects and normal persons was 1.6°C . It has already been pointed out, however, from the figures in Table III, that this is not enough, of itself, to cause a difference in skin colour. Secondly, heating the body and limbs caused a smaller rise in temperature on the forehead and nose in rosacea patients than in normal subjects. Thus the arterioles in these areas, often maximally affected in rosacea, are not rendered more sensitive to heat as a result of the malady. Finally, no correlation was found between the colour and the temperature of the skin in rosacea patients, either at the beginning or at the end of the experiment. Although the intensity of colour in many cases of rosacea remains the same summer and winter, the tint changes from red to blue when the weather becomes cold. In other words, the arterioles may be contracted or dilated without affecting the intensity of the rosacea. This is not so in acrocyanosis where the state of the arterioles is an essential part of the malady and where arterial dilation leads to diminution in the intensity of colour.

Skin temperature measurements, therefore, suggest that the arterioles play no part in causing the persistent facial erythema characteristic of rosacea.

SUMMARY.

The temperature of the skin of the face of rosacea patients and normal subjects was measured at rest, after cooling the face, and after heating the body and limbs.

No marked or constant difference in skin temperature was found between the two groups.

Skin temperature measurements suggest that the arterioles play no part in the pathogenesis of cutaneous rosacea.

This investigation was carried out at the Institute of Ophthalmology, and it is a pleasure to thank the Director, Sir Stewart Duke-Elder, for his interest and encouragement. I should like also to thank Mr. M. P. Kirwan, Statistician, St. Bartholomew's Hospital, for the analysis of the figures.

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HISTOCHEMICAL OBSERVATIONS ON FOUR CASES OF CHEIROPOMPHOLYX.

A. W. ASSCHER, B.Sc.

Department of Anatomy, London Hospital Medical College.

Fox (1873) introduced the term dysidrosis to describe a vesicular eruption of the hands and feet. He attributed this condition to a retention of sweat in the ducts, but this conclusion has not passed unchallenged. Hutchinson (1876), who first applied the term cheiropompholyx to this condition, questioned the validity of the "sweat-retention hypothesis". Robinson (1877) showed that the composition of the vesicular fluid differed from that of sweat. Sutton (1913) found no connection between sweat ducts and vesicles. Whimster (1950) considers that two distinct types of pompholyx vesicles exist, one dysidrotic, in which sweat ducts open into vesicles, and the other eczematous, in which no such connection exists. Devine (1952) and Wilson and Thackray (1952) found no connection between sweat ducts and vesicles; the latter authors observed that sweat ducts may become included into expanding vesicles forming with their surrounding cells a kind of septum in the midst of the vesicle; upon the breakdown of this septum a secondary connection between the sweat duct and vesicle is established.

The purpose of this study was to approach the problem of vesicle formation from a histochemical aspect. Four cases have been examined. Comparable results were obtained in each case, thus providing some further evidence for the histopathological identity of pompholyx vesicles of different aetiological origin claimed by many workers (e.g. Devine, 1952).

MATERIALS AND METHODS.

CASE 1.—A man aged 45, a railway look-out.

History.—Eight years of recurrent attacks of small blisters on feet, spreading to involve both hands. Attacks usually in the summer. Present attack began 3 months ago with small blisters on left heel, spreading to both palms and later to the sides of the fingers.

Examination.—Small pompholyx lesions on sides of fingers and on palms. Secondarily infected blisters on feet with eczematous eruptions on dorsal aspects of both feet. Hyperidrotic. No fungus found. Skin elsewhere clear.

CASE 2.—A man aged 28, a control clerk.

History.—Suffered from blistering between the toes of the right foot for eight months; developed an irritating vesicular rash on hands five months ago; the latter has persisted since then.

Examination.—Grouped pompholyx lesions on palms and sides of fingers. Scrapings for fungus from sole and hand were negative on two occasions. No hyperidrosis. Skin elsewhere clear.

CASE 3.—A man aged 49, a chemical process worker.

History.—In the past four years has had recurrent attacks of vesicular rash on both hands predominantly affecting the palms. Attacks all the year round. He was never completely clear of it.

Examination.—Pink peeling dyskeratotic palms with grouped pompholyx lesions and scattered vesicles on sides of fingers. Feet clear; skin elsewhere also clear. No hyperidrosis.

CASE 4.—A man aged 44, a caterer.

History.—For eight years recurrent attacks of an itchy vesicular rash affecting palms and sides of fingers. Attacks occur winter and summer.

Examination.—Grouped vesicles on both palms with peeling interdigital clefts. No hyperidrosis. Skin elsewhere clear.

Biopsy specimens were taken from the skin of the left hypothenar eminence in each case. These were fixed in Rossman's fluid and 80% alcohol. Serial sections, cut at 7μ , were prepared and studied with the following procedures:

(i) Haematoxylin-eosin: Several preparations were made to study the general histology.

(ii) McManus periodic acid Schiff (PAS) technique.

(iii) Diastase extraction: Sections were incubated for 3 hours at 37°C . in diastase solution and then taken through the PAS procedure.

(iv) Hyaluronidase extraction: Sections were incubated for periods ranging from 3 to 20 hours at 37°C . in 1000 Benger units of hyalase dissolved in 1 ml. of 0.85% saline at pH 4.4; they were then taken through the PAS procedure.

(v) Methyl alcohol-chloroform extraction: Sections were incubated in a mixture of equal parts of methyl alcohol and chloroform for periods up to 18 hours at 37°C .; they were then taken through the PAS procedure.

(vi) Metachromasia: This property was examined by the toluidine blue technique. A 0.05% solution in citrate buffer (pH 3.5) was used.

(vii) Ferricyanide method for —SH groups (Chèvremont and Frédéric, 1943).

(viii) Gomori alkaline phosphatase procedure: Sections were incubated for 1, 3 and 5 hours. Sodium- β -glycerophosphate was used as substrate.

All histochemical observations were checked against adequate controls.

OBSERVATIONS.

(a) Contents of Vesicles.

The acellular contents were eosinophilic and showed PAS positivity. This material appeared in the form of a beaded network within those vesicles not enclosed by the corneum (Fig. 1). In "maturing" vesicles (i.e. those which are in the process of being enclosed by the corneum) this material appears more condensed (Fig. 2), whilst in the "mature" vesicles (i.e. those completely enclosed by the corneum) this material shows a uniform and very intense PAS positivity (Fig. 3). The material resisted diastase, hyaluronidase and methyl alcohol-chloroform extractions. No metachromasia was observed. These observations indicate that the material in question contains glycoprotein.*

* The term glycoprotein is used to denote carbohydrate-containing protein material whether the carbohydrate moiety be less or more than 4%.

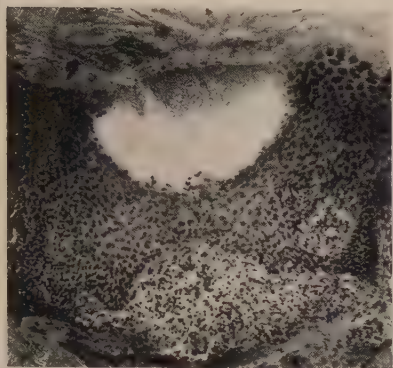


FIG. 1.—An immature vesicle. The granulosum reaches to edge of vesicle. Defectively keratinized cells seen in roof. PAS positive beaded network seen inside vesicle. PAS and haematoxylin. $\times 87$.

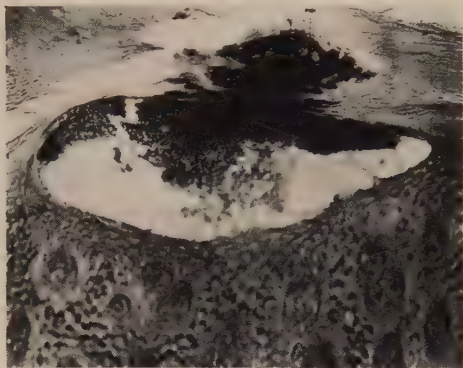


FIG. 2.—A maturing vesicle. Contents appear more condensed. PAS and Light Green. $\times 120$.

Cellular infiltration of the vesicles was found. Lymphocytes and polymorphs were identified ; some prickle cells were present within the vesicles.

(b) *The Vesicle Wall and its Immediate Surroundings.*

The floor and walls of "immature" vesicles consist of attenuated prickle cells. Their cytoplasm shows some PAS positive inclusions ; the ground substance between them shows greater PAS positivity than that elsewhere between the prickle cells. Both these PAS positive inclusions of the lining prickle cells and the ground substance between them resisted the various types of extraction mentioned above ; neither showed metachromasia. The ground substance elsewhere in the epidermis showed very slight PAS positivity, which was also resistant to the extractive procedures employed ; it too did not show metachromasia.

The roof of the immature vesicle is formed by three or more layers of defectively keratinized cells. The stratum granulosum could neither be traced into the roof nor into the floor of the vesicles ; it extends up to the sides of the vesicle. Using the Chèvremont-Frédéric ferricyanide procedure for the demonstration of —SH groups, the granulosum showed strong positivity, and diffuse zones of —SH positivity were found in the areas showing defective keratinization in the roofs of immature vesicles. As the vesicles mature, keratinization occurs beneath them. At the same time the granulosum reforms beneath the vesicle, showing strong —SH group positivity. A parallelism between these processes appears to exist. The mature vesicle is at all times surrounded by two or three layers of defectively keratinized cells. These show slight —SH positivity and the ground substance between them shows distinct PAS positivity.

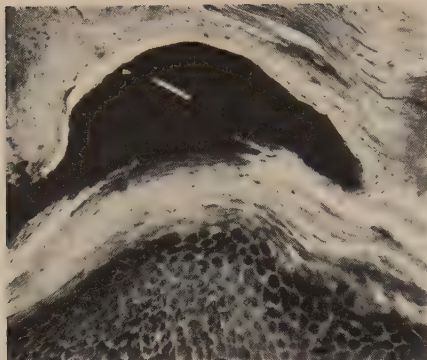


FIG. 3.—A mature vesicle. Intense and uniform PAS positivity inside vesicle. Granulosum has regenerated beneath vesicle, which is surrounded by defectively keratinized cells. PAS after hyaluronidase extraction, counterstained haematoxylin. $\times 120$.

FIG. 4.—A sweat duct approaching a mature vesicle. The section of the duct adjacent to the vesicle contains PAS positive material identical with the acellular vesicle contents. PAS and Light Green. $\times 120$.

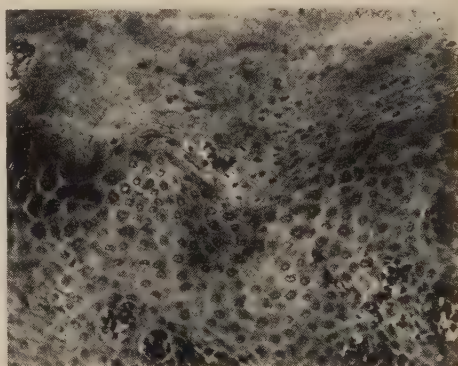


FIG. 5.—Showing glycogen distribution in biopsy specimen taken from Case 2. PAS and Light Green. $\times 120$.

FIG. 6.—A vesicle primordium. Note defective keratinization and absence of granulosum above the primordium. The increase in PAS positivity of the intercellular substance can just be seen in places, and the PAS positive inclusions of the prickle cells at the site of the primordium can be seen. PAS and haematoxylin. $\times 133$.

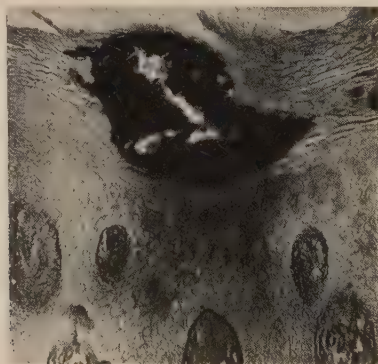


FIG. 7.—A more advanced vesicle primordium beneath a mature vesicle. Note the distinct increase in PAS positivity of the intercellular substance. PAS after diastase extraction, counterstained Light Green. $\times 120$.

c) *The Sweat Ducts.*

The present observations are in agreement with those of Wilson and Thackray (1952). Sweat ducts were invariably found to by-pass the recently formed vesicles. These ducts contained no PAS positive material. Occasionally a sweat duct was encountered which showed PAS positive material in its lumen. This material possessed properties identical with those of the acellular vesicle contents. These ducts could only be traced to some of the mature vesicles and they were found to contain the PAS positive material only in the parts adjacent to these vesicles. Fig. 4 illustrates such a duct. The presence of this material could be due to a forcing back of vesicle contents into the adjacent parts of the duct, which has secondarily opened into the vesicle in some such manner as that suggested by Wilson and Thackray (1952).

d) *Epidermal Glycogen.*

A heavy accumulation of a granular PAS positive material was found in the cytoplasm of the prickle cells, mainly between the areas of recently formed vesicles in the biopsy specimens in Cases 1 and 2. The distribution of this material can be seen in Fig. 5. None is found in the deepest layer of the epidermis; heavy accumulations are found in the more superficial strata up to the stratum granulosum. The latter stratum as well as the stratum lucidum and corneum are devoid of this material. This substance was completely removed by diastase extraction; it resisted hyaluronidase and methyl alcohol-chloroform extractions and was non-metachromatic. It may be concluded that this material is glycogen. Very slight amounts of glycogen were found in the specimen taken in Case 3; it showed a similar distribution to that described above. No epidermal glycogen could be demonstrated in the biopsy specimen of Case 4. In Cases 1 and 2, x-ray treatment had been given shortly before removal of the biopsy specimen; in Case 3 such treatment had been given three months before the removal of the specimen, and in Case 4 no x-ray treatment had been given. Thus this glycogen accumulation, in agreement with the findings of Montagna (1953), is an effect of x-irradiation and is not attributable to intrinsic factors associated with cheiropompholyx. It may have been added to by other types of irritation, such as scratching (Montagna, 1953); this may explain the presence of the small amounts of glycogen in the biopsy in Case 3.

e) *Vesicle Primordia.*

Immediately beneath the stratum granulosum several small areas were encountered where the PAS positivity of the ground substance between the prickle cells appeared markedly intensified compared with that between the neighbouring prickle cells. At these sites the prickle cells also showed PAS

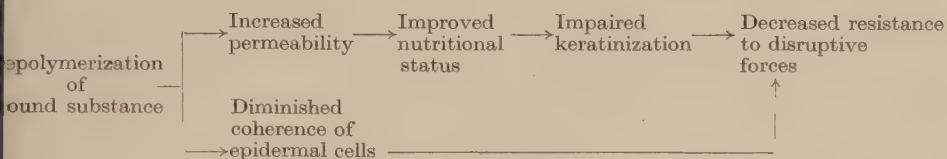
positive inclusions. Both these inclusions and the ground substance between the prickle cells resisted diastase, hyaluronidase and methyl alcohol-chloroform extractions; they were not metachromatic. Fig. 6 illustrates such an area. It will be noted that the granulosum immediately above the site has disappeared and that the corneum above it shows defective keratinization, characterized by a diffuse —SH group positivity in the area. These sites have been interpreted as vesicle primordia. Vesicle primordia are usually found vertically below a more mature vesicle. There appears to be a vertical succession, as it were, of vesicles. This is well seen in Fig. 7, where a more advanced vesicle primordium than that of Fig. 6 is seen immediately below a mature vesicle. In agreement with Fisher and Glick (1947) alkaline phosphatase positivity was found in the granulosum; no positivity was observed beneath the sites of defective keratinization overlying the vesicle primordia.

DISCUSSION.

The present histochemical observations have shown a similarity between the acellular vesicle contents and the epidermal intercellular ground substance. The observations on vesicle primordia lend further support to the idea that the acellular vesicle contents contain intercellular substance. The increased PAS positivity of the ground substance at the sites of vesicle primordia could be attributed to a depolymerization of the ground substance, as suggested for other tissues by Gersh and Catchpole (1949). Such depolymerization would lead to a decreased viscosity of the ground substance; a diminished coherence of the epidermal cells would thus result. Depolymerization of ground substance may therefore play an important rôle in vesicle formation. The PAS positive inclusions of the prickle cells at sites of vesicle formation may be indicative of an increased production of ground substance. Local increased production of intercellular substance and simultaneous loss of coherence of epidermal cells might be important factors in vesicle formation; cellular infiltration does not occur until a later stage in the life-cycle of a vesicle.

It is of further interest that wherever the epidermal ground substance displayed increased PAS positivity an area of defective keratinization was found immediately overlying it. Some degree of correlation between the degree of polymerization of the ground substance (and therefore also its permeability to nutritive materials) and the degree of keratinization appears to exist. Wislocki, Fawcett and Dempsey (1951) have observed that the PAS positivity of the ground substance of stratified squamous epithelia is inversely related to the degree of keratinization. The degree of keratinization might bear a relation to the nutritional status of the superficial layers of these stratified squamous epithelia, which in turn may be dependent on the degree of polymerization of

the ground substance. Thus the following series of events might be pictured :



Much further work needs to be done to clarify causality in a chain of correlated events such as this, and the order in which these events are presented must be considered only as a tentative suggestion. The absence of alkaline phosphatase positivity in the cells underlying areas of impaired keratinization might suggest that these cells, unlike those undergoing normal keratinization, retain an aerobic metabolism consequent upon the local increase in permeability of the ground substance.

CONCLUSIONS.

- (1) Histochemical observations on four cases of cheiropompholyx indicate similarity of the acellular vesicle contents to the intercellular epidermal ground substance.
- (2) No primary connection between sweat ducts and vesicles was found in the cases investigated.
- (3) Depolymerization and possibly increased production of ground substance are suggested as important factors in vesicle formation.
- (4) The degree of polymerization of ground substance appears to be related to the degree of keratinization. This finding is discussed.

I wish to express my gratitude to Dr. B. F. Russell and Prof. R. J. Harrison for creating the opportunity to carry out this work, and for subsequently reading the manuscript. I am indebted to Mr. R. Quinton Cox for his care in the preparation of photographs.

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BULLOUS ACRODERMATITIS.

H. VAN DER MEULEN.

Lecturer, Department of Dermatology, University of Indonesia,
Djakarta, Indonesia.

ALTHOUGH the results of the treatment of chronic bullous dermatitis in adults and in children have improved with new developments in therapeutics, a report of an apparent cure of this condition may yet be of value.

Case Report.

A four-year-old Indonesian boy entered our ward on 22 February 1954. He had been treated in the Outpatient Department since October 1953, but after making an initial improvement he relapsed.

History.—The mother gave the following case history: He had always been a fairly healthy child; he had never had yaws, malaria, dysentery or chronic diarrhoea. He is the fifth child, and the other four children had no skin disorder. There is no consanguinity between the parents.

The disease started about July 1953 with an eruption of bullae on the arms and legs, hands and feet. Some of the bullae turned into erosions and crusted ulcers which finally healed. New crops of bullae appeared, spreading to the genital region and around the anus. In October he was treated with penicillin and vitamin B in the Outpatient Department, and the condition of the skin improved but did not heal. Early in February there was a severe outburst, finally necessitating admission to hospital.

On examination we found a small, nervous boy, weighing 22 lb. (The average weight of an Indonesian child of four years is 30 lb.) Except for his skin condition, he did not look ill. Internal examination revealed only a liver palpable 3 cm. below the costal margin, and enlargement of the axillary and inguinal glands.

There was a scaly eruption of the scalp with loss of hair on the vertex; perleche; and a squamous eruption on the anterior axillary fold and under the chin. On the arms and legs were bullae, with ulcerated and scaling areas (Fig. 1). The contents of the bullae, which varied from 1–4 cm. in size, were clear, with no surrounding halo. Especially on the hands and fingers and on the backs of the legs, much desquamation occurred, forming plaque-like areas. The fingers were swollen, with no perionychia, and the nails were normal. The dorsum of the right foot and the toes were free. On the outside of the left leg new bullae had formed on the border of disappearing lesions (Fig. 2). The inner parts of the thigh, scrotum and perineum showed the same eruption. Nikolsky's sign was negative. The eruption did not seem to be itchy, because the patient did not scratch. The oral mucosa and the tongue were normal.

Investigations.—R.B.C. 3,110,000 per c.mm., Hb 12.1 g.; W.B.C. 13,300 per c.mm. (polys. 45%; band forms 7; lymphos. 36; monos. 2; eos. 10%).

E.S.R.: 31 mm. in first hour.

The urine was normal. In the faeces ascaris eggs were found.

The Wasserman, Kahn Murata and V.D.R.L. tests in the blood were negative.

In scrapings of the skin no mycelia or yeast-like organisms were found.

Progress.—The first treatment consisted of procaine penicillin intramuscularly, and local application of 1% boric acid in pasta zinci oleosa. After six days there was no improvement and new bullae continued to appear. Considering the good results obtained with sulphapyridine in the treatment of dermatitis herpetiformis, we decided to make a trial with a sulphonamide. From 3 March the patient was given 100 mg. sulphamezathine *t.i.d.*, 4 g. sodium bicarbonate and extra fluid. The same day the biopsy of a small intact bulla was made. The response to this treatment was far better than we expected: after 3 days' treatment no new bullae were observed, and by 9 March the skin was practically clear. Treatment was then stopped since sulphonamide crystals were found in the urine.



FIG. 1.

On 12 March two new bullae appeared on the left hand. Sulphamezathine was again given, 50 mg. *t.i.d.*, and on 16 March the eruptions were all healed.

The patient was kept under observation until 12 May, when he went back to his remote village. At this time his skin showed hyperpigmentation where the lesions had been. He had gained 5 lb. in weight.

Histology.—The biopsy (Fig. 3) shows a part of a completely subepidermal bulla. From the oedematous floor irregular papillae are growing upward. The epidermis

shows no acantholysis but spongiosis in places, and formation of many multilocular vesicles. The cells in the exudate are lymphocytes and monocytes with a few eosinophils.

In diagnosis, scabies, impetigo bullosa, toxicodermia, culicinosi bullosa and acrodermatitis vesiculosa tropica (Castellani and Chalmers) could be ruled out.



FIG. 2.

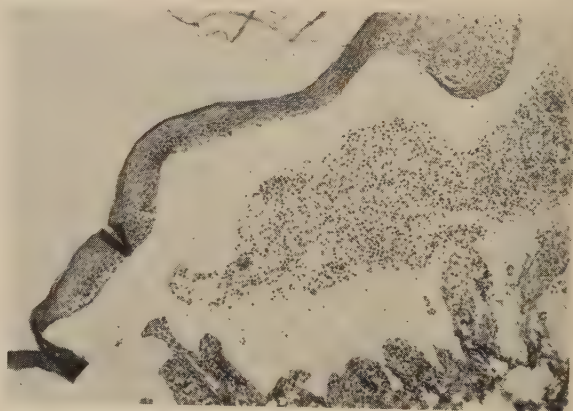


FIG. 3. $\times 33$.

Epidermolysis bullosa simplex or dystrophica, dermatitis herpetiformis, pemphigoid, pemphigus chronicus and the bullous form of erythema exudativum multiforme came under consideration, but the clinical and histopathological features of the dermatosis did not fit sufficiently with any one of them to make a diagnosis acceptable. The symptoms of this patient do, however, show much resemblance to a condition first described by two Norwegians, Danbolt and Closs, under the name of acrodermatitis enteropathica. In 1942 they described

two cases of pustular dermatitis in children, localised on the head, trunk, extremities and around the natural openings of the body. Fingers and toes were particularly affected, the terminal phalanges were swollen, and paronychia and atrophy of the nails occurred. It was a chronic disease with exacerbations and remissions. The exacerbations were accompanied by diarrhoea; the prognosis was serious.

In 1948 Danbolt described two children with a bullous disorder with dermatitis around the natural openings, total alopecia, paronychia and periodic diarrhoea. Of the above-mentioned symptoms, our patient showed: (i) A bullous eruption on the extremities, around the anus and genital regions; (ii) no total alopecia but loss of hair on the vertex; (iii) the patient was undernourished but a gastro-intestinal dysfunction could not be demonstrated; (iv) the fingers were swollen, but the nails and toes were not affected. Except for the enteropathy, these symptoms were about the same as described by Danbolt. Our patient had one or two well-formed stools daily, and throughout his stay of 78 days in hospital he had no diarrhoea. The question arises whether insufficient or inadequate food or the poor assimilation of it in some cases can give rise to the same symptoms.

In 1952 Dillaha and Lorincz demonstrated a case of the disease in Chicago. They had tried Gantrisin, a sulphonamide, in high doses (2 g. daily for a 3-year-old child) for a week with no results. They noticed a spectacular improvement with Diodoquin, a drug used in the treatment of chronic amoebic dysentery. In this case the gastro-intestinal dysfunction was a secondary symptom. Bloom (1954) also demonstrated a case last year with vesicular lesions and scaly plaques, improved by the use of Diodoquin. Biopsy of a vesiculo-bullous lesion showed "inter-epidermal vesicles with marked inflammatory reaction of the papillary bodies". In the available literature this was the only report on the histopathology of this condition that could be found. In our case the bulla was subepidermal with the formation of vesicles in the epidermis.

Study of other cases will have to prove whether bullous acrodermatitis in children is a separate entity or a form of dermatitis herpetiformis, erythema multiforme, or one of the epidermolysis bullosa group.

SUMMARY.

A report of a case which showed most of the symptoms of acrodermatitis enteropathica (Danbolt), but where no signs of gastro-intestinal disturbance could be detected. The skin lesions healed quickly after treatment with sulphamezathine.

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ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY

President Dr. REGINALD T. BRAIN.

18 March 1954.

Poikiloderma.—Dr. H. R. VICKERS.

Mrs. B. T—, aged 31.

In 1949 a few days after the birth of her fourth child, she started with an "abscess inside her mouth". Three weeks later she noticed puffiness of the eyelids and an erythematous rash appeared on the face, upper chest, shoulders and forearms. As the rash persisted in spite of treatment given by her own doctor she was referred to hospital on 8 February 1951, some 18 months after the onset. At that time her general health was good, and on the skin of the face, neck, upper chest, forearms and backs of fingers and hands was a diffuse erythema which on the neck and arms markedly spared those areas of skin which naturally crease on movement. The eyelids were very puffy.

There was no muscular weakness and no history of it. Since first seen the erythema has persisted, and in addition small lichenoid papules have appeared on all the erythematous areas. The lesions have become more pigmented and there is more contrast between the affected and unaffected areas. The linear sparing of the skin creases is very obvious.

The nail-folds of the fingers show vascular dilatation.

General health remains good.

Investigations.—Blood count, 9 February 1951: There was a leucocytosis of 20,000 per c.mm. (polymorphonuclear leucocytosis) but except for that all blood counts have been within normal limits.

Bone marrow.—Cytology normal.

"L.E." cell investigation.—(Dr. R. E. Blackburn). 7 March 1951.

Treated marrow smears using a modified Haserick method showed leucocyte clumping in 4 minutes but no "L.E. cells" at 10–15 minutes.

7 February 1952: A very occasional lupus erythematosus cell seen. There are, also, scattered "tart" cells.

Serum protein.—24 February 1951: Total serum protein 7.4 g. per 100 ml. Serum albumin 4.7 g. per 100 ml. Serum globulin 2.7 g. per 100 ml.

Creatine and creatinine output.—17 February 1951: Twenty-four hour specimen of urine (vol. 1,900 ml.) contained creatinine 1.0 g. Creatine plus creatinine 1.19 g.

Histology.—(Dr. L. C. D. Hermitte). 22 February 1951: The section of skin shows increase of collagen in the dermis. The epidermis is thin with virtual absence of rete cones, and flattened papillae. There is practically no inflammatory infiltration around the vessels.

13 March 1951: The section consists of a portion of skin showing marked hyperkeratosis of the epidermis with numerous cornified plugs in the hair follicles. The corium shows some oedema and focal perivascular infiltration of chronic inflammatory cells.

22 February 1951: Section of muscle shows no histological abnormality.

Treatment.—Various therapeutic measures have been tried, including intramuscular injections of bismuth and myocrisin and various antihistaminic drugs and mepacrine

mouth without improvement. She has derived most benefit from painting the lesions with thorium X.

Discussion.—When I first saw this woman I considered dermatomyositis, subacute lupus erythematosus and poikiloderma in that order. I discarded the diagnosis of dermatomyositis on the absence of muscular weakness, on the normal creatine-creatinine excretion and on the normal muscle biopsy. The diagnosis of generalized chronic lupus erythematosus was made by several eminent members of this section when I showed her to the North of England Dermatological Society in April 1951, and this diagnosis was up to a point supported by the histology, but watching the course of the condition over the last few years, I feel that she is probably an unusual example of poikiloderma.

She may perhaps be a case of "dermatomyositis sine myositis" since she began with erythema and swelling of the face and eyelids, but all the cases reported by Howling and Freudenthal (1938) had muscle changes.

A very striking feature of the lesions is the linear distribution on the neck and upper arms. The only other condition I have been able to find that resembles this is so-called parapsoriasis lichenoides linearis. From Wallhausen's (1919) description of the condition this is almost certainly a variety of parakeratosis variegata and so is of the same group of diseases as poikiloderma of the Lane type.

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Poikiloderma (forme fruste).—Dr. I. B. SNEDDON.

Mrs. E. H.—, aged 40, housewife.

This patient was first seen in August 1952 when she complained of bluish red scaly lesions on the backs of the fingers which had been present for at least six years. She had suffered from chilblains of the fingers and toes for about ten years before the rash appeared. It appeared to be more noticeable in the winter but did not subside even in warm weather. There was no history of Raynaud's phenomenon.

Apart from the skin lesions, which were not irritable or sore, she felt in good health and had had no significant previous illnesses.

On examination the condition of the hands was as they are to-day with purplish papules arranged in a linear distribution on the backs of the fingers and dilated capillaries visible in the nail folds. The remainder of her skin, particularly of her face, was normal.

A diagnosis of chronic lupus erythematosus of the hands was made and she was given mepacrine 0.1 g. *b.d.* At the end of two months an irritable papular scaly eruption appeared on her forearms and the mepacrine was stopped.

The rash on the forearms slowly faded, leaving the lesions on the fingers in their original state. They have remained unchanged during the last year and have been uninfluenced by thorium X which was applied at monthly intervals seven times to the right hand.

During the last six months telangiectases have appeared on the sides of the face and neck and on the eyelids. She has noticed no muscle weakness or constitutional upset of any kind.

Investigations.—Blood W.R. and Kahn negative.

Biopsy.—January 1954: The biopsy of skin of the left thumb shows hyperkeratosis, increase in the granular layer, the cells of which show large coarse keratohyalin granules, liquefactive degeneration of the basal layer, and an infiltrate consisting largely of lymphocytes in the upper corium. The rete pegs show irregular lengthening with a "saw-tooth" appearance.

There is no evidence of lupus erythematosus, and the appearances suggest lichen planus.

A previous biopsy of skin in October 1952 showed essentially the same change which was at that time considered to be a lichenoid change due to mepacrine.

Blood counts have been carried out on 21 August 1952; 29 October 1952; 13 March 1954. All have been normal.

Direct Coombs test, negative. Cold agglutinins, negative. No L.E. cells found. E.S.R. 6 mm. in 1 hour.

Comment.—The diagnosis first considered was chronic lupus erythematosus but the gradual appearance of telangiectases on the eyelids and down the sides of the neck, the histological findings suggesting lichen planus more than lupus erythematosus and the absence of any haematological abnormality made me doubtful of this diagnosis.

Other possibilities which occurred to me were the benign variant of poikiloderma on the extremities described by Samman, Calvert and Tillman (1951) but in their cases the lesions were atrophic and confined to the flexor aspect of the limbs, and the chilblain lupus of Hutchinson.

However, the picture of Hutchinson's original case bears no resemblance to this case and shows lesions suggestive of an artefact.

My final conclusion was that the case was an incomplete example of poikilodermatomyositis.

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Dr. F. Ray BETTLEY: I thought that both cases were more like dermatomyositis. Looking at the skin and the telangiectasia of the nail-folds, the oedema of the eyelids, the discoloration of the eyelids, I thought it was more like dermatomyositis than poikiloderma. How long a lapse may you have between the occurrence of the skin and the muscle lesions? It is a long one perhaps, but the disease does affect the two systems rather differently in different cases.

Dr. H. J. WALLACE: We have a patient at St. Thomas's Hospital whose symptoms began as with Dr. Vickers' patient, followed after an interval of about five years by muscle changes and morbid weakness. I thought that this first patient of Dr. Vickers' certainly belonged to the dermatomyositis group.

Permanent Freckles.—Dr. R. E. BOWERS and Dr. I. WHIMSTER.

Mr. J. E. P—, aged 30, clerk.

History.—His lesions were first noticed at the age of four, since when they appear to have become more prominent. Sunlight does not darken them, and they were unaffected by two years in the tropics during the war.

His general health has always been good.

Family history.—Negative.

Examination.—Multiple flat pigmented marks, up to 4 mm. in diameter, are scattered over the body, most profusely on the face, arms and legs. In colour they are brown and jet-black; some of the latter show minute pseudopodium-like extensions at the margins. There is no evidence of xeroderma pigmentosum.

A jet-black mark was taken from the left forearm for microscopic examination.

Comment.—The first problem here is to name the condition, and I have found difficulty in deciding whether freckles, ephelides and lentigo should really be separated one from the other (lentigo maligna is, of course, an entirely separate entity).

There seems no doubt that etymologically they are all equivalent. Lewis and Short's Latin dictionary quotes Pliny, among others, as having used the term lentigo to mean a freckly eruption; they consider it to derive from the Latin *lens*, a lentil.

Liddell and Scott's lexicon says that the Greek word *epheides* was used to describe rough spots which stud the face; or freckles.

Of the clinical textbooks, Sequeira, Ingram and Brain; MacLeod; Sutton and Sutton, use the three terms synonymously. Dr. Roxburgh has pointed out that Sequeira's patient with "Permanent Freckles" is very like the one shown today.

Ormsby and Montgomery, quoting Zeisler and Becker (1936) attempt to differentiate freckles (ephelides) from lentigo, saying that freckles tend to develop later in life, are lighter in colour, and tend to fade or even disappear when not exposed to sunshine. They consider that lentigines may merge with abortive forms of xeroderma pigmentosum, and that histologically one may encounter transitions between lentigines and superficial naevi. On these grounds the present case would appear to be one of lentigo.

When this patient first came to my clinic, he asked if I could sandpaper away his marks as suggested in an article he had been reading. I shall therefore be very glad to have the opinion of the meeting on whether there is any risk of malignant change in this condition, and if not, whether any form of surgical planing could be attempted.

REFERENCE.

ZEISLER and BECKER (1936) *Arch. Derm. Syph., Chicago*, **33**, 109.

Dr. I. W. WHIMSTER: I think the dark parts in this man's skin are indistinguishable from the skin of a negro. He is piebald, like all of us, though perhaps rather more than most. There are three different ways in which a piece of skin can become over-pigmented. It can contain more melanoblasts than normal, or the normal number can produce more melanin, or pigment can be stored in the dermis in the form of a tattoo-mark. These processes should be kept distinct by the use of separate names.

For the kind of lesion which I think this patient has, consisting of increased activity on the part of a normal number of melanoblasts, whether it is activated by sunshine, pregnancy hormones or anything else, I would use the term "freckle". The term "lentigo" should be kept for the presence of an excessive number of melanoblasts.

Dr. H. HABER: Freckles are due to an irregular distribution of pigment within the basal-cell layer and are due to sunlight. They occur in fair and ginger-haired people. Histologically there is simple local hyperpigmentation of the basal-cell layer. Lentigo on the other hand is independent of sunlight, occurs also on covered parts of the body, and shows histologically localized acanthosis and an increase of melanoblasts with pigmentary hyperactivity. They are pigmented naevi and potentially dangerous as they may develop into junctional naevi, malignant lentigo or malignant melanoma. One should remove this type of lesion wherever it is exposed to constant friction or irritation. The lesions on the patient's face are lentigines.

Dr. I. B. SNEDDON: I saw a girl about 15 years old who resembled Dr. Bowers' case but had many more freckles. About the time I saw her I read an article (Winter, 1950) which said that trichloroacetic acid in ether was the way to remove these freckles without causing too much pain. I tried it and it did remove the freckles for some time but they gradually came back. I repeated the process and got an even greater clearing. The skin desquamated and the freckles could be seen in the desquamated skin. I have not seen her for two years so do not know whether the improvement was permanent.

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Dr. I. S. HODGSON-JONES: I have had a little experience in using the sandpaper method and have been pleased with the result. I use an ethyl chloride spray to reduce the pain and to make the skin firm. I have used a dental drill, which I think is a good method for these cases. It takes a good deal of patience.

Dr. C. D. CALNAN: I have been informed by a plastic surgeon who has used this abrasive method that at a follow-up review after three months the result was excellent, but the freckles have returned at the end of a year.

The PRESIDENT: Sandpaper is made from silica and it seems a dubious technique to rub grains of silica into the skin.

I have seen two children get a crop of these spots associated with obvious pigmented naevi. They are rather frightening but I usually leave them alone, and in my experience they do not progress. I think that the more numerous the pigmented naevi are, the safer they are as atavistic phenomena. It is the solitary or the unseen pigmented spot which makes the dangerous melanoma.

Prurigo Nodularis.—Dr. REGINALD T. BRAIN.

Present history.—Mrs. E. L—, housewife aged 55, stated that the present eruption began five years ago soon after she had had two prolonged courses of penicillin within a short period. At the same time she also developed hay fever. She thought that irritation usually preceded the eruption, but as she has had frequent attacks of urticaria since childhood it was not clear whether the irritating eruption was in fact urticaria. The eruption began with small papules which persisted and slightly increased. Severe attacks of irritation occurred, and she either scratched the tops off the nodules or sliced a little from the surface in an attempt to improve the condition. She was otherwise in good health. Four years ago she had Gilliam's suspension operation.

Family history.—Father had eczema and one of her two children has asthma.

Present condition.—On the dorsal surfaces of the forearms, on the legs up to the mid-thighs, and on the palms and soles there are scattered, circumscribed, indurated dome-shaped nodules, from $\frac{1}{2}$ –1 cm. in diameter. The smaller lesions are smooth and ivory or pink in colour. The larger and older nodules have a rough surface covered with a greyish horny crust. Many are topped with small haemorrhagic crusts as the result of scratching. About the eyes are numerous small flat, pink, translucent papules which do not appear to be related to the major eruption and histological examination of these lesions show that they are tricho-epithelioma. There are no enlarged glands, the mucous membranes are unaffected, and a blood count and an examination of the urine revealed no pathological changes.

Histology.—There is considerable hyperkeratosis with patchy parakeratosis, the former extending into the follicles. The granular layer is in parts hypertrophic. There is acanthosis, but no oedema in the Malpighian layer. The rete pegs are irregular, mostly elongated, and correspondingly the papillae are high and narrow.

In the centre of the nodule there is an abundant perivascular nodular infiltrate in the upper and mid-cutis with strands accompanying the vessels to the lower cutis. The infiltrate consists chiefly of round cells and histiocytes. There are also numerous fixed connective-tissue cells. The vessels are increased in number and dilated. The collagen fibres are normal, but have of course disappeared within the infiltrate except for a network of fine fibres.

With Masson's trichrome stain a number of mainly small nerve bundles, mostly situated at the periphery of the infiltrate, are in evidence.

Discussion.—Apparently a specific histological picture of this disease does not exist, but the features in this case bear some resemblance to the unique example presented by Drs. Elford and Parkes Weber in 1950, in which also there was considerable hyperkeratosis and acanthosis which was excessive in the older lesions. There was a broad band of granulation tissue under and invading the epidermis, which according to the authors has been described only in one other case. But in the younger lesions there was a nodular, perivascular infiltrate consisting of lymphocytes and histiocytes as in our case.

The disease was first described by Hardaway in 1880. In 1908 Hyde reported a case and gave it its present name. Other cases have been reported under the name of urticaria perstans verrucosa. Lailier and Brocq (*cit. Pautrier*, 1934) described cases under the name of lichen obtusus corneus, but later on Brocq and Pautrier (1908, 1928) ranged the condition with the abnormal lichenifications and showed that neither clinically nor histologically is there any connection with lichen planus. A number of authors, such as Fabry (1915), Kreibich (1923), Beron (1929), Darier (1929) and others share Brocq's and Pautrier's opinion. Others, however, like Nicolas, Gaté and Massia (1927) maintain that the condition is a variety of lichen planus.

Pautrier, who recently made a thorough histological examination of 15 cases, claimed that by staining his sections with Masson's trichrome he found an excessive hypertrophy of nerve fibres, "*veritable nevromes*," which he thinks are specific to the con-

tion. Although we have, by using the same method, been able to see a number of small nerve bundles, we did not think that the amount of cutaneous nervous tissue needed, in our case, that in the normal skin.

The aetiology of the condition is unknown. It is interesting that this patient had a history of recurrent urticaria and that the onset of the eruption occurred with a first attack of hay fever a short time after two prolonged courses of penicillin which followed each other within a short interval. There is also an allergic family history concerning the father and one child of the patient. Civatte (1926) points out that instances of hypersensitivity have been noted—for instance, in the case of Barneitz (1928).

The course of the disease is very slow and chronic. In one of Fabry's cases it had been present for 28 years. Treatment may have some symptomatic value. Excision has been tried, but there has been recurrence. Radiotherapy had a temporary effect in some cases. Irritation is not in all cases of equal severity; one case has been recorded by Darier and Roberti (1921) where there was no irritation.

I am indebted to Dr. T. Kindler for reviewing the literature.

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Dr. W. P. ELDFORD: The old gentleman whom Dr. Parkes Weber and I showed (1950) never had factitious urticaria. I believe that in this patient it is well marked. The early lesions in each case appear to be similar.

Dr. F. F. HELLIER: I had a patient for a long time with exactly the same condition and having seen her sections and those of Pautrier I have no doubt that there is a marked proliferation of nerve fibres. Whether it is primary or secondary I do not know, but I have the impression that it might be a reaction. It shows very much better with the Masson stain. The condition is extremely difficult to treat and I have the feeling that the patients I have seen have all had a significant psychiatric factor, particularly my first case. Nothing would affect her lesions at all and the only method which helped her was cutting out the nodules, which gave me as much biopsy material as I wanted.

Dr. FERGUSON SMITH: I had a patient like this some years ago and I thought it was lichen obtusus corneus, but in the moulages of the Hôpital Saint-Louis there is one labelled lichen obtusus corneus in which can be seen also typical papules of lichen planus. My impression is that lichen obtusus corneus and prurigo nodularis are not one and the same. My patient derived most benefit from freezing with carbon dioxide snow, but perhaps that would not suit this patient.

Dr. J. SOMMERVILLE: I would suggest repeated painting with coal tar. It takes a long while but it is worth while.

Dr. G. B. DOWLING: I had a case of this kind with these thumb-shaped lesions on both legs and thighs. The legs from the knees down to the ankles were sealed up in plaster of Paris for six weeks and under that treatment these things disappeared. Later they came back again. Below the plaster they persisted but under the plaster they were flattened out.

Congenital Ectodermal Defect.—Dr. K. V. SANDERSON.

An unmarried woman aged 48.

History.—Her hair and nails have had their present appearance since birth, and she has never had eyebrows or lashes. She sweats normally, her sense of smell and

taste are normal, as is her vision. She has been concerned about thinning of her scalp hair lately. She had never noticed redness of her cheeks.

Family history.—Father and two brothers similarly affected. She knows nothing of her father's relatives. Her parents were not related.

Examination.—The hair of her head is grey-white, frizzy, lustreless and rather brittle. It is rather thin, especially at the crown. The eyebrows and lashes are absent. The cheeks have an erythematous flush with fine telangiectasia, and at times a few spiny follicular plugs have been found. The teeth are well worn, but not carious, and those missing can be accounted for by extractions. The palate is high and arched, and the voice has a windy nasal quality as though the soft palate were deficient. The nails are thin and have longitudinal ridges and grooves. The free border ends about $\frac{1}{4}$ in. from the finger tip and is curled up and separated from the nail bed. The skin is generally dry and fine textured and the lanugo hair is deficient. There is slight hyperkeratosis of the palms which she attributes to washing up.

Microscopy of scalp hairs shows them to be flattened and curled. There is no sudden torsion or narrowing of the shaft.

Comment.—There are a number of different varieties of congenital ectodermal dysplasia. The major form has quite a characteristic picture, in no way like this patient, and is inherited as a recessive character. The less severe defects have been described under various names, depending on the different combinations of hair, nails, teeth and so on involved. I think these are rather uncommon and I would like to hear of similar cases.

The following cases shown have been published in *Proc. roy. Soc. Med.*, **47**, 657:

Recurrence of Lupus Erythematosus in Skin Graft.—Dr. J. E. M. WIGLEY.

? Necrobiosis Lipoidica Diabeticorum of the Scalp.—Dr. LOUIS FORMAN.

An Unusual Intra-epidermal Carcinoma.—Dr. LOUIS FORMAN.

Reticulosis with Localized Alopecia—Dr. J. S. PEGUM.

The following cases also were shown:

Porphyria Cutanea Tarda.—Dr. STEPHEN GOLD.

Lichen Amyloidosis.—Dr. R. H. MEARA.

Sarcoidosis under Treatment with Cortisone—Dr. D. S. WILKINSON.

Lichen Planus in a Child—Dr. K. V. SANDERSON (for Dr. R. T. BRAIN).

NORTH OF ENGLAND DERMATOLOGICAL SOCIETY.

Manchester, May 1954.

Lichen Spinulosus with Cicatricial Alopecia.—Dr. G. AUCLAND.

A woman, aged 68.

History.—For 30 years she had noticed increasing baldness especially of the vertex. For $2\frac{1}{2}$ years there has been a rash on the trunk, maximal on the shoulders and on the chest, in the form of horny spines projecting $\frac{1}{16}$ in. above the surface. Irritation by light.

Examination.—Scalp: Most of the vertex and crown shows atrophy and alopecia. No folliculitis or other skin change.

Trunk: Scattered horny spines on shoulders and upper part of back and chest, apparently follicular.

Progress.—Slow resolution after one year's treatment with mild salicylic acid ointment and oral vitamin A (50,000 units) daily. A year ago, after thyroidectomy, the rash cleared for 6 months, and is now relapsing.

Comment.—This case seems to be similar to Graham Little's cases of lichen spinulosus et folliculitis decalvans. The scalp lesion preceding the lichen spinulosus by many years is in agreement.

Lichen Planus involving the Scalp.—Dr. G. AUCLAND.

A woman aged 37.

History.—Four years ago she developed typical lichen planus of abdomen, axillae and tongue. Five months ago she noticed bald patches on the scalp, especially on the crown, left parietal and left occipital areas.

Examination.—Abdomen and axillae: Faint brown macules compatible with the usual traces of lichen planus.

Tongue and inner surface of right cheek: Typical white patches of lichen planus.

Scalp: Areas of alopecia with atrophy and marked violaceous colour especially at the periphery of the affected areas. No erythema or follicular plugging.

Dermatomyositis.—Dr. P. B. MUMFORD.

A child aged 7.

History.—Four months ago a few small red spots appeared on the cheeks, gradually extended and became confluent. Later the eyelids became puffy and the rash spread to the backs of the hands, knees and elbows. Recently complained of stiffness and weakness of limbs. No preceding illness except for tonsillectomy 2 years ago.

Investigations.—Skiagram of chest normal. Urine normal.

Blood count normal. L.E. cells not found. E.S.R. 10 mm. (Westergren).

Plasma Proteins. Albumin 3.6%, globulin 2.3%.

Urinary creatine 98 mg. in 24 hours; urinary creatinine 670 mg. in 24 hours.

Mantoux: 1 in 10,000 negative.

Progress.—Increasing muscle weakness and dysphagia. Uninfluenced by Cortisone, CTH, and mepacrine.

Lupoid Reaction to Vole Bacillus Vaccination.—Dr. J. CURRY.

Youth aged 17.

History.—He was found to be Mantoux-negative by the Tuberculosis Research Unit in 1951 and in November of that year was vaccinated on the left upper arm with Vole bacillus by the multiple puncture method.

In February 1952 the Mantoux reaction was positive. Chest skiagram normal. Site of vaccination was then developing reddish-brown persistent papules.

Histology.—Tuberculous granuloma.

Progress.—Lesions became larger and developed a scaly surface, spreading peripherally (Fig. 1). Superficial ulceration at anterior lower edge.

Treatment.—Responding to Isoniazid.



FIG. 1.

Comment.—Several other cases showing persistent lupoid reaction from Vole bacillus vaccination have occurred in the Manchester area. At each vaccination 40 punctures are made; some show only 1 to 3 persistent papules and others show up to 35. Some of the nodules become confluent and though they rarely extend beyond the site of inoculation, all show undoubted lupus features.

The following cases also were shown :

Angiolupoid.—Dr. J. G. COBURN.

? **Naevus Elasticus Regionis Mammariae.**—Dr. J. G. COBURN.

Pseudotuberculoma Silicoticum.—Dr. P. B. MUMFORD.

? **Reticulum-cell lymphoma.**—Dr. J. CURRY.

Pityriasis Rubra Pilaris (2 cases).—Dr. B. PORTNOY.

Cold Urticaria.—Dr. J. K. MORGAN.

Bilateral Naevus Linearis Verrucosus.—Dr. L. WERTHEIM.

York, June 1954.

Multiple Epitheliomata.—Dr. C. W. MACKENZIE.

A farmer aged 56.

History.—For the last 22 years the patient has had large numbers of tumours on the face (including the lip), scalp, neck and limbs. Some of the tumours have appeared spontaneously, leaving slight scarring; many have been treated by radiotherapy, excision or diathermy. There has been enlargement of the lymphatic



FIG. 1.



FIG. 2.

glands in the left axilla and supra-clavicular region and at the back of the neck. Block dissection of these glands has been carried out, but no evidence of malignancy was found on histological section. No other member of the family has had a similar condition.

He usually works with a hat on and his sleeves down so that, although he is a farmer, the parts of the skin most affected have not been exposed to sunlight to any great extent.

On Examination.—The tumours are firm, freely movable, bluish red or skin coloured, varying in size up to a diameter of 1 cm. Many of them ulcerate in the centre. A typical tumour is shown in Fig. 1.

Histology (Dr. Froome).—There is marked hyperkeratosis, with a punched-out pit filled with a mass of keratin. In the lower right-hand corner (Fig. 2) early invasion of the corium is occurring with the formation of cell nests. The general histological picture suggests early squamous carcinoma of low grade malignancy.

Comment.—The individual tumours have the clinical and histological characteristics of kerato-acanthoma. The multiplicity of the tumours suggests the multiple self-healing epithelioma of Ferguson-Smith, but any lesion which on biopsy suggested malignancy has been treated and it is therefore impossible to say whether they are in fact self-healing.

Hidradenitis Suppurativa of Axillae and Acne Conglobata of Buttocks.

—Dr. PETER INMAN.

A housewife, aged 33 years.

At the age of 21 she became troubled by increasingly severe abscesses and cysts which started on the back of the neck and spread to the axillae, groins, buttocks and back. Since that time the condition has steadily progressed and she has developed granulomatous abscesses at the back of the left knee and on the right arm. When seen at out-patients in June 1953 she was unable to sit owing to abscesses and fistulae of the buttocks.

She said that an uncle had died some years previously at the age of 48 as a result of sepsis following the same disease.

Histology.—The lesion at the back of left knee showed comedones formed by accumulation of sebum which in places had become infected and formed abscesses.

W.R. was negative, and skiagram of the chest was normal.

Progress.—She became pregnant in 1948 and again in 1950, and during both periods there was a very striking improvement in the skin lesions, which dried up and ceased to discharge. She was therefore treated with oestrogens later, but vaginal haemorrhage was produced; in view of the severity of the eruption and the sepsis, hysterectomy was advised. Since this operation was performed in October 1953 she has been taking ethinyl oestradiol 0.01 mg. 5 times daily and the skin has improved dramatically. She has also been further improved by aureomycin.

Although nearly all the abscesses have healed there is still one granulomatous ulcerated area on the lateral surface of the left hip.

HANDBOOK OF DISEASES OF THE SKIN. BY H. O. MACKEY.

In our issue for August–September (66, 331) we published a review of this book. It has since been brought to our notice that this review contained a number of inaccuracies and was accordingly unfair to the author. The review is therefore withdrawn in its entirety and we wish to tender our regrets to Dr. Mackey.

BOOK REVIEWS.

DISEASES OF THE SKIN.*

It was among Dr. Ormsby's remarkable achievements that this standard work has retained its pre-eminent position in the last three decades, and before he died he was active in the preparation of this eighth edition.

In addition to the work of his former colleagues, Dr. Montgomery and Dr. Finnerud, there are now included chapters on special subjects by Drs. DeLamater, Farber, Kierland and Lobitz. In reading the text criticisms or omissions which come to mind seem always to be rectified in a later paragraph—a phenomenon which may depend on the method by which this edition was revised. Although much of the dead wood has been cut out and up-to-date material added, it seems possible that some of the old stuff remains which might not be repeated if the section were completely re-written. For example, although the recent views on the significance of acanthosis in the diagnosis and classification of pemphigus which sprang from Civatte's observations are very well discussed, these paragraphs do not give the impression of being thoroughly assimilated into the rest of the chapter. However, apart from such matters of style, your reviewer could not, throughout the book, detect any omission of importance.

Illustrations have been increased in number and are of good quality, though some coloured plates are of doubtful value.

These are, of course, minor criticisms and this edition in every way maintains the high standard which has made this book unsurpassed as a concise work of reference.

F. R. B.

THE PHYSIOLOGY AND BIOCHEMISTRY OF THE SKIN.†

TEXTBOOKS on dermatology contain meagre and often antiquated information on the basic physiology and biochemistry of the skin. Individual papers on such topics are widely scattered in the literature; often their uneven quality or mode of presentation makes them difficult for the unspecialized reader to evaluate. Dr. Rothman and his collaborators have therefore earned the gratitude of the dermatological world by presenting this critical review written in a manner comprehensible to the clinician. This book should be of great value as a work of reference not only to research workers in dermatology, to whom it is principally addressed, but also to any dermatologist interested in his subject beyond morphological diagnosis and empirical treatment.

The material is well set out with useful chapter sub-headings, apt illustrations, numerous references and a full index. In an undertaking of this magnitude it was perhaps inevitable that some of the work should have been delegated. It is indeed remarkable that Dr. Rothman succeeded in writing no less than three-quarters of the total and he has clearly inspired his colleagues to contribute monographs which largely maintain his high standards of accuracy and interest.

P. J. H.

* *Diseases of the Skin*. By OLIVER S. ORMSBY and HAMILTON MONTGOMERY. (1954) 8th Edition. London: Henry Kimpton. Pp. 1503. Illus. 750 and 18 in colour. Price: £8.

† *The Physiology and Biochemistry of the Skin*. By Stephen Rothman and six other contributors. Chicago: The University Press, 1954. London: Cambridge University Press. Pp. 741. Price £7 6s. 6d.

THE CONNECTIVE TISSUES.*

TOWARDS the end of a somewhat windy introduction the editor tells us that "the contributions have been made in the hope to acquaint the medical world with the status and significance of connective tissue science by means of surveys bringing each aspect up to date". After this the 24 contributors are left to get on with their 22 short chapters with little further interference from the editor. With so many isolated contributions there is inevitably much repetition with frequent reintroduction of subjects already outlined, and most readers will prefer to pick out certain chapters rather than read through so uneven a book as a whole.

Among the contributors are many leading workers concerned with connective tissue research. The ground covered is much the same as that which has been covered in the Connective Tissue Conferences sponsored in recent years by the Josiah Macy Jr. Foundation. It is a little disappointing not to get some different approaches to the subject, which might perhaps have come from comparative anatomy, embryology or physiology.

In areas of highly specialized research there are some excellent contributions containing references to very recent work. Karl Meyer gives us a concise and authoritative survey of the chemistry of the mucopolysaccharides of connective tissues and Dorfman provides a useful review of what is known about the metabolism of the connective tissue mucopolysaccharides together with original data from his own laboratory on the incorporation of C^{14} labelled carbohydrates in hyaluronic acid synthesis. Bostrom discusses the data on the uptake of radio-active sulphate in connective tissue, whereby it is hoped to learn something about the turnover of chondroitin sulphate in the living animal. Mathews and Dorfman discuss the factors which inhibit hyaluronidase with a background of their own most detailed researches into the nonspecific inhibitors of serum, and put forward some original views on enzyme inhibition by micelle formation.

At the end of a useful short review of the chemistry of collagen Kulonin remarks: "The number of biological applications is meagre but basic knowledge accumulated is stimulating", and this may perhaps apply to the whole book. The scientific contributions are useful and stimulating while the clinical contributions are banal and cursory. To be acceptable, the very short review (dare one say "digest article"?) must be concise and accurate. How then can there be place, in a chapter headed "Hormonal Influences on Connective Tissue", for a discussion on pigmentation in Addison's disease, in which the author leads us on to his entire ignorance of its mechanism? And what possible evidence is there for acne being caused by "low grade organisms" concentrated in the dermis, as Sprunt suggests? And it seems curious that a large section of an article on "Arthritis" should be devoted to a discussion of the general pathology of polyarteritis nodosa and disseminated lupus erythematosus.

There are, however, some good chapters from the pathologists. Robb-Smith gives a scholarly account of the morphology of connective tissue, and some fresh work on the nature of reticulin is very welcome. Klemperer's "General Considerations on Collagen Diseases" is an admirable essay and his remarks on the nature of haematoxylin-staining bodies and their relation to fibrinoid changes in systemic lupus erythematosus are particularly interesting. There is also a good chapter on the histochemistry of connective tissue by McManus, with a useful collection of recent references.

This book covers a variety of interesting topics and it contains several excellent short articles which are warmly recommended, but it is a pity that these have been diluted with material that has been put together without very much care.

G. C. W.

* *Connective Tissue in Health and Disease*. Edited by G. ASBOE-HANSEN. Denmark: Ejnar Munksgaard, Copenhagen, 1954. Pp. 321. Price \$7.50 (Danish kroner 50).

OBITUARY

DR. A. C. ROXBURGH.

Dr. A. C. ROXBURGH, Emeritus Physician for Diseases of the Skin at St. Bartholomew's Hospital, London, died suddenly at his work on 3 December 1954 at the age of 68. His death will be greatly deplored by his friends, colleagues and past students.

Archibald Cathcart Roxburgh was born at Valparaiso, Chile, on 17 August 1886, son of Archibald and Janet Briggs Roxburgh. He was educated at Charterhouse, going on from there to Trinity College, Cambridge, having gained an exhibition in Natural Science. In 1908 he took a first in the Natural Science Tripos. He was a senior entrance scholar at St. Bartholomew's Hospital from which he qualified M.R.C.S., L.R.C.P., in 1912. In 1913 he obtained the M.B., B.Ch. of Cambridge by thesis and in 1919 the M.R.C.P., London. He took the M.A. and the M.D. Cambridge, the latter by thesis in 1921, and was elected a Fellow of the Royal College of Physicians of London in 1929.

After holding several resident house appointments at St. Bartholomew's Hospital he served as a Surgeon Lieutenant in the Royal Navy during the 1914-18 War. On returning to St. Bartholomew's he was appointed Chief Assistant in the Skin Department in 1919, Assistant Physician for Diseases of the Skin in 1927, and Full Physician in 1928 on the retirement of Dr. H. G. Adamson. On reaching the retirement age in 1946 he was appointed Emeritus Physician for Diseases of the Skin at St. Bartholomew's Hospital, and held that appointment until his death.

From 1924 to 1935 he was Assistant Physician, then Physician to St. John's Hospital for Diseases of the Skin, being Dean of the London School of Dermatology (now the Institute of Dermatology, British Postgraduate Medical Federation) from 1924 to 1930. From 1920-1925 he also held the appointment of Assistant Medical Officer to the V.D. Department at St. Bartholomew's as well as being Dermatologist to the Royal Masonic Hospital, Wembley Hospital, and the Hampstead Hospital for Children. He was also Honorary Dermatologist to the Association of Retired Naval Officers from 1925.

During the Second World War he was Consultant in Dermatology to Sector 3 of the Emergency Medical Service.

He was elected a Member of the British Association of Dermatology in 1925, and was Honorary Secretary in 1944-45 and President in 1946. He was also a Member of the Dermatological Section of the Royal Society of Medicine, and President in 1943-45. He was a member of St. John's Hospital Dermatological Society from 1925, being President for two years 1930-31 and 1931-32. He was twice Vice-President of the Section of Dermatology at annual meetings of the B.M.A. He was a corresponding member of the Danish, Hungarian and Belgian Dermatological Societies.

Roxburgh may well be best remembered for his book *Common Skin Diseases* which first appeared in 1932. Its success may be judged by the fact that a French translation of the 8th edition appeared in 1949, and that the 9th edition appeared in 1950. For its size and intended scope, the book was, and still is, one of the best text-books on dermatology in the English language. Roxburgh's other publications were chiefly in this Journal, of which he was Assistant Editor from 1926-1930 and then Editor to 1938. He also contributed to the *British Encyclopedia of Medical Practice* in 1935.

In 1927 he introduced to this country from France the fluorescence test (Wood's Light) for detection of ringworm infected hairs. He demonstrated this to the Dermatological Section of the R.S.M. at their meeting in March.

In 1938 he arranged for the manufacture of Thorium X in this country which, prior to that, had been made only in France and Germany.

On his retirement from the active staff of St. Bartholomew's Hospital he founded the Roxburgh Prize in Dermatology. This is for Third Year Students of that hospital. He always gently postponed the suggestion that he should be one of the examiners for the Prize.

Roxburgh was essentially "a plain, blunt man, that love my friend." His first love was his work and his approach to dermatology was essentially a practical and, may we say, a British one. He had little patience with long-winded theorizing and always wanted to know "does it work?" His favourite hobby was photography (he was an Associate of the Royal Photographic Society), and he combined this hobby most successfully with his work, taking most of his own clinical photographs both in hospital and in private practice, with many of which he illustrated his book. He was a most regular attendant of dermatological meetings, both of the B.A.D. and the Dermatological Section of the R.S.M., and a successful and stimulating President of each. His comments and questions were always terse and very much to the point.

His ready sense of humour, his essential kindness and his wide knowledge of his chosen subject will make his absence a serious loss to British Dermatology.

To his widow, his three sons, all of whom are doctors, and to his daughter, we offer our most sincere sympathy.

CURRENT LITERATURE.

TISSUE THERAPY BASED ON PH MEASUREMENTS IN ULCUS CRURIS. H. J. SONNECK.
(1954) *Derm. Wschr.*, **129**, 271.

Ulcers of the leg (37 patients) when healing showed (indicator method, every 4 days) a shift in pH to the alkaline side, e.g. healing ulcers 7.6-7.9: those only improved after 48 days, 7.5; and uninfluenced 6.9-7.2 approximately. In healing there is heightening of the carbohydrate (and protein) metabolism from some biological stimulus, and a diminution of the acid intermediate and end products which have accumulated as a result of reduced oxydation processes and increased glycolysis. This allows of optimum conditions for alkaline phosphatase activity. Fischer found the optimum pH for tissue culture of fibroblasts to be between 7.4-7.8. A pH under 5.2-4 and over 9 completely inhibited growth. Ring found an increased alkaline phosphatase activity in healing wounds and ulcers in experimental animals. Pain appears to lessen with diminution of acidity.

M. S. S.

STUDIES OF THE POSSIBLE ROLE OF ALLERGENIC SENSITIZATION AND SOME UNSPECIFIC FACTORS IN EXPERIMENTAL CARCINOGENESIS. I. R. W. PICCAGLI, F. HERRMANN, M. J. ROTHSTEIN, F. SERRI, and L. FRANK. (1954) *Acta dermat.-venereol., Stockh.*, **34**, 216.

Accelerated tumour formation follows increasing the frequency of applications of a solution of methylcholanthrene in benzene from three times weekly to once daily, and later to three times daily. Tumours were verrucous papillomas, eventually showing low grade malignancy.

G. A. H.

STUDIES OF THE POSSIBLE ROLE OF ALLERGENIC SENSITIZATION AND SOME UNSPECIFIC FACTORS IN EXPERIMENTAL CARCINOGENESIS. II. R. W. PICCAGLI, G. HERRMANN, L. FRANK, and F. SERRI. (1954) *Acta dermat.-venereol., Stockh.*, **34**, 224.

Results of applications of methylcholanthrene in benzene interspersed with applications of other substances showed that such interspersed applications as lanoline diminish the total exposure to methylcholanthrene whilst glycerine and petrolatum increased the persistence of the available carcinogen.

G. A. H.

STUDY OF EFFECT OF APPLICATIONS OF METHYLCHOLANTHRENE IN LANOLINE.

M. B. SULZBERGER, R. W. PICCAGLI, F. HERRMANN, F. SERRI, L. FRANK and M. J. ROTHSTEIN. (1954) *Acta derm.-venereol., Stockh.*, **34**, 234.

Part 1.—A high percentage of mice painted with methylcholanthrene in lanolin (40% of "surviving number") developed late tumours which, however, immediately showed malignant characteristics missing from the tumour-formation of methylcholanthrene in benzene.

Two tendencies applied, either early dermatitis and papillomatosis, or a tendency toward less dermatitis and then late "carcinoma d'emblée".

Part 2.—Results of further stimuli to the skin of mice that had remained free from cancer after treatment with methylcholanthrene in lanolin, resulted in tumour-formation later, not only from reapplication of methylcholanthrene, but also by application of dimethylbenzanthracene and by methylcholanthrene than with the other substances. The mere physical trauma was not a stimulus to tumour formation in methylcholanthrene prepared sites. G. A. H.

STUDIES OF THE POSSIBLE ROLE OF ALLERGENIC SENSITIZATION AND SOME UNSPECIFIC FACTORS IN EXPERIMENTAL CARCINOGENESIS.

F. SERRI, F. HERRMANN and D. KIRMAN. (1954) *Acta derm.-venereol., Stockh.*, **34**, 248.

Attempts to induce contact hypersensitivity of guinea-pig skins to a chemical carcinogen produced suggestive results with methylcholanthrene, but not with dimethylbenzanthracene, where reactions were due to primary irritation. G. A. H.

A CLINICAL AND FOLLOW-UP STUDY OF 53 CASES OF DERMATITIS HERPETIFORMIS WITH ELECTRON MICROSCOPICAL EXAMINATION OF ONE CASE.

J. EVERALL. (1954) *Acta derm.-venereol., Stockh.*, **34**, 259.

A critical follow-up of 53 patients with dermatitis herpetiformis. The incidence was 1 in 800 dermatological patients. Males outnumbered females 1.6 to 1. No connection between disease and occupation, nor seasonal variation. One-third of the patients showed some relationship between disease and psychological factors. Pigmentation simulating the raindrop character of arsenical pigmentation may be natural in dermatitis herpetiformis and occurs where no arsenic has been given. No statistical difference in groups controlled by sulphapyridine and by arsenic. One-third of the patients were apparently cured after 10 years; 5½ years being average duration. Of the disease. Electron microscopic examination showed no virus particles in vesicular fluid. G. A. H.

THE EFFECT OF TOPICAL APPLICATION OF PYRIDOXINE OINTMENT ON THE RATE OF SEBACEOUS SECRETION IN PATIENTS WITH SEBORRHOEIC DERMATITIS.

H. EFFERSOE. (1954) *Acta derm.-venereol., Stockh.*, **34**, 272.

Determinations were made of 4-hour sebaceous secretion in 12 patients with seborrheic dermatitis. Ointment base alone (Neobase) caused a significant decrease in the amount of lipids, but the addition of pyridoxine to the base made no further changes to the result from base alone. G. A. H.

FOLLOW-UP EXAMINATION OF 157 PATIENTS WITH EARLY MUCO-CUTANEOUS SYPHILIS TREATED WITH PENICILLIN AND FOLLOWED FOR ONE TO FOUR YEARS.

A. PENDRUP, B. HEILESEN, B. SYLVEST. (1954) *Acta derm.-venereol., Stockh.*, **34**, 134.

Of 157 cases of early muco-cutaneous syphilis treated with procaine-penicillin for 1-4 years, only 2 relapsed (failure rate 1.3%). G. A. H.

FOLLOW-UP OF PEMPHIGUS PATIENTS TREATED WITH ACTH.

F. REYMANN, P. SOBYE. (1954) *Acta derm.-venereol., Stockh.*, **34**, 152.

A 3-year follow-up of 19 patients treated with ACTH was carried out. (8 malignant pemphigus vulgaris, 1-4 courses, 3-115 days' treatment; 2 pemphigus vegetans, 2 pemphigus foliaceus, 1-3 courses, 61-105 days' treatment; 7 benign pemphigus vulgaris, 1-3 courses, 7-74 days' treatment.)

Twelve of the 19 were still alive, 4 with active symptoms, but 2 were controlled with continued ACTH and cortisone. One died shortly after. Eight cases were symptom-free, but complained of persistent or intermittent itching.

These comprised 4 out of 12 malignant pemphigus cases, 4 out of 7 benign pemphigus. No relief of symptoms occurred in 2 pemphigus foliaceus.
G. A. H.

ON THE SPONTANEOUS CURE OF PLANTAR WARTS. K. A. RASMUSSEN. (1954) *Acta derm.-venereol., Stockh.*, **34**, 144.

Spontaneous disappearance of plantar warts occurs with characteristic clinical picture of superficial dryness and a dark or almost black appearance, the periphery being occasionally scaly. Histology showed that the wart consisted of a dry, crumbling substance and the changes appeared to be thrombosis of the blood vessels and homogeneous degeneration of most of the wart with formation of new epithelium beneath the whole.

Such spontaneous regression is met equally frequently in the two sexes, but is more common in children, and did not occur in mosaic warts.

Two-thirds of cases occurred when the warts had been in existence from two to six months.

G. A. H.

ERYTHEMA NODOSUM MIGRANS. B. BAFVERSTEDT. (1954) *Acta derm.-venereol., Stockh.*, **34**, 181.

Erythema nodosum migrans is a quite ordinary variant of "typical" erythema nodosum. The lesions are less tender, develop slowly and in a migratory fashion; often asymmetrically and unilateral; sometimes proceeding from a single nodule. The eruption may continue for about 2 months or up to 6 months. Pathologically the changes are identical with typical erythema nodosum. Half of the cases had initial symptoms of fatigue and catarrh of the upper respiratory tract. This series of cases showed three types of eruption:

1. Originally presenting as typical, proceeding later to migrating, erythema nodosum.
2. Migrating erythema nodosum from onset.

3. Cases simulating erysipelas. Prognosis favourable. Aetiology the same as comparable average Swedish cases of erythema nodosum in adults.

G. A. H.

SPONTANEOUS CIRCUMSCRIBED PANNICULITIS (WEBER-CHRISTIAN DISEASE). S. ARNER. (1954) *Acta derm.-venereol., Stockh.*, **34**, 194.

A 54-year-old man, over 6 months, had four attacks of pyrexia and pannicular infiltrates which disappeared without demonstrable atrophies between attacks.

The pathology confirmed the diagnosis. Additional symptoms of pyrexia, asthma, hay-fever, eosinophilia seemed to support the infectious-allergic causation. The allergic symptoms had been present two years previously.

G. A. H.

OBSERVATIONS ON THE EFFECT OF CORTISONE IN ACNE VULGARIS. J. W. DIDCOCK. (1954) *J. invest. Derm.*, **22**, 243.

Smallish doses of cortisone are given to reduce the abnormally high output of 17-ketosteroids in congenital adrenal hyperplasia and the clinical signs of virilism are reversed. It therefore seemed worth while to try 25 mg. daily in 17 cases of acne. Nothing happened in 12 of them. In the 5 thought to be improved or altered, it looked as if a combination of oestrogen with cortisone might have been responsible.

J. H. T. D.

TRICHOPHYTON RUBRUM INFECTION SIMULATING ERYTHEMA PERSTANS. M. WAISMAN. (1954) *J. invest. Derm.*, **22**, 237.

In lesions easily mistaken for erythema perstans in one or other of its eponymous varieties the author has detected the fungus; but more often than not only after prolonged and repeated search.

J. H. T. D.

THE NOSOLOGICAL POSITION OF SENEAR-USHER SYNDROME. W. HAUSER. (1954) *Derm. Wschr.*, **129**, 418.

The author in this study compares the findings in acute lupus erythematosus, pemphigus vulgaris and Senear-Usher syndrome in regard to the L.E. phenomenon and the Tzanck test. In the heparinized blood of 2 patients with Senear-Usher syndrome he could demonstrate leucocyte rosettes and L.E. cells, while repeated tests for Tzanck cells from the bulla base of one patient (his own) were consistently negative. In pemphigus chronicus vulgaris on the other hand Tzanck cells could be demonstrated in all cases, but the L.E. phenomenon in none. In acute lupus erythematosus, subacute or chronic with acute exacerbation, he found the L.E. phenomenon in all (14) patients.

M. S. S.

THE FORMAZAN REACTION IN THE QUANTITATIVE ESTIMATION OF THE REDUCING CAPACITY OF SALVES. A. GERAUER. (1954) *Derm. Wschr.*, 129, 414.

The author describes the method in detail and finds that 5% ascorbic acid in vaseline has a similar reducing power to cignolin in vaseline in therapeutic doses. Other body-reducing substances, methionine and cysteine have not that power.

In one patient with psoriasis the half of the body treated with ascorbic acid was somewhat slower in responding than that treated with cignolin, but on the other hand a patient with widespread psoriasis intolerant of cignolin gradually cleared up on the 5% ascorbic acid in vaseline: has the further advantages that it does not irritate (even up to 20% in strength), does not stain and is no dearer in price than cignolin 1%.

M. S. S.

CONTACT ECZEMA FROM ISONICOTINIC ACID HYDRAZIDE. H. RÖCKE and I. SIXT. (1954) *Derm. Wschr.*, 129, 296.

A nursing sister developed contact eczema with 2% Neoteben solution in ampoule after use of an alcohol as disinfectant which irritated her skin and that of seven other people. Patch test positive but negative to hydrazine sulphate 1% and isonicotinic acid. Prausnitz-Kästner reaction negative.

M. S. S.

ECZEMA AND CALCIUM METABOLISM. A. ST. V. MALLINCKRODT-HAUPT. (1954) *Derm. Wschr.*, 129, 289.

The exudation of eczema suggests the lack of a membrane-thickening and water-binding substance. The power of calcium to regulate or to inhibit the reactivity of cells has been pointed out, also its water-binding power—about 22 molecules of water as compared with 4 by potassium. To explain the variable response to Ca administration the author has estimated the blood Ca in eczema and urticaria during the past years (Kramer and Tisdall method). Low values were found in only 7% of eczema patients (more frequently in urticaria) and these were usually severe and intractable and responded well to Ca. In a previous investigation the author found 54% of such patients to have gastric subacidity and suggests that this may cause diminished absorption of Ca. One group improved with Ca but did not heal, nor did the serum Ca return to normal until AT10 was given along with oral and sometimes intravenous Ca, suggesting hormonal derangement on the part of the parathyroid particularly when associated with menstruation (in two patients there was a history or complaint of tetany) or pregnancy. Another group showed a disturbed serum A/G. ratio with hypo-proteinaemia and hypo-albuminaemia, thus reducing the Ca-binding power of the serum. A high protein liver supporting diet with an acid pepsin mixture helped where Ca alone did not. The administration of vitamin D₂ was not found to help in any of the groups.

M. S. S.

TREATMENT OF PRURITUS IN RELATION TO AGE, ESPECIALLY WITH COMBINED PARATHYROID EXTRACT AND IONIZED CALCIUM. H. WALTER. (1954) *Derm. Wschr.*, 130, 795.

It has been shown that the parathyroids of the old show more resting oxyphil cells than the more active glands of the young, and for pruritus of the elderly the author gives calciocrin (parathyroid extract with a mixture of K, Mg and Ca salts) obtaining relief a few hours after the injection of 10 c.c. (5 c.c. in the younger subject) given once or twice daily. Should immunity to the hormone develop in subjects aged 30-40 he changes over to centramin (a new Mg, Ca, glycocoll preparation) which acts very well. In a patient with latent diabetes, the urine remained clear while on the injections.

M. S. S.

INFLUENCE OF CANDIDA ALBICANS ON THE HEN EMBRYO. H. GÖTZ and TH. NASEMANN. (1954) *Derm. Wschr.*, 130, 774.

Inoculation of allantoic membrane with a loopful of culture (from a lesion) in 1 c.c. of Ringer's solution caused death of the embryo within 24 hours in 8 instances and within 5 days in another; not till 48 hours with dilutions of 1-10 and 1-100, and 72 hours with 1-1000. Pathogenic strains grew on the membrane but non-pathogenic strains failed to grow or to kill the embryo.

M. S. S.

THE TREATMENT OF LUPUS ERYTHEMATOSUS WITH CHLOROQUINE SULPHATE. G.HARVEY and T. COCHRANE. (1954) *J. invest. Derm.*, **22**, 89.

Chloroquine now seems to equal mepacrine and the good results previously obtained with it are no longer to be attributed to spontaneous improvement. Can it be, they ask, the diethylamino-1-methylbutylamino side chain that does the trick?

Though therapeutically inferior to bismuth, chloroquine in their view is "the drug of choice in early cases of lupus erythematosus because of its efficacy, its low toxicity and ease of administration".

The forming of naïve clinical impressions of this kind is well within the capacity of the beginner and should not rank as investigative dermatology. J. H. T. D.

THE USE OF CHLOROQUINE DIPHOSPHATE (ARALEN) AND QUINACRINE (ATABRINE) HYDROCHLORIDE IN THE PREVENTION OF POLYMORPHOUS LIGHT ERUPTIONS.M. M. CAHN, E. J. LEVY and B. SCHAEFFER. (1954) *J. invest. Derm.*, **22**, 93.

Complete protection in 14 of 16 cases.

J. H. T. D.

DERMATITIS HERPETIFORMIS LOCALISED TO THE LEGS. OSWALDO G. COSTA and J.GONTIJO. (1954) *Ann. Derm. Syph., Paris*, **81**, 528.

A case is described in a girl aged 15 in whom dermatitis herpetiformis occurred only on the legs in attacks over five years. F. F. H.

ALTERATIONS IN THE GASSERIAN GANGLION IN CASES OF PEMPHIGUS OF THE MOUTH.FRANCOIS FOLDVARI and JOSEPH BALO. (1954) *Ann. Derm. Syph., Paris*, **81**, 507.

These authors have previously described cysts and vacuolar degeneration in the cells of the spinal ganglia with oedema of the capsule in cases of pemphigus. They now report similar changes in the Gasserian ganglion in patients with buccal lesions. F. F. H.

URETHRITIS WITH INCLUSION BODIES. G. MOUSTARDIER, J. BRISOU and M. PERREY. (1954)*Ann. Derm. Syph., Paris*, **81**, 521.

In 340 cases of non-gonococcal urethritis inclusion bodies were discovered in 58. These were sometimes monomorphous inclusions of chlamydozoon type and sometimes polymorphous inclusions of the L organism type. A method is described of isolating these organisms; the most satisfactory treatment was with aureomycin. F. F. H.

BESNIER-BOECK-SCHAUMANN DISEASE OF PRURIGO TYPE. L. M. PAUTRIER. (1954) *Ann.**Derm. Syph., Paris*, **81**, 481.

The author feels that on the basis of the literature and his own personal experience there is no such thing as a special type of sarcoidosis (the author dislikes this name) with prurigo. The pruriginous phenomena are extremely rare and are only incidental and transient. F. F. H.

CHLOASMA AND SEX HORMONES. L. CORIAT and CH. GRUPPER. (1954) *Actas dermo-sif.*,*Madrid*, **45**, 299.

No gynaecological abnormalities were found on clinical examination of 7 patients with chloasma, but vaginal smears indicated a hypersecretion of folliculin. Treatment with testosterone propionate cleared the chloasma, in addition to altering the type of cell in vaginal smears.

G. W. B.

THE URINARY 17-KETOSTEROIDS IN THE DIAGNOSIS OF PEMPHIGUS. M. I. QUIROGA andR. N. CORTI. (1954) *Actas dermo-sif., Madrid*, **45**, 233.

In examination of the urinary output of 17-ketosteroids in more than 200 affections of the skin the authors always found an increased output except in 19 with bullous affections which were at a later date proved to be examples of pemphigus vulgaris. They consider a diminished output of these steroids to be an early diagnostic sign. G. W. B.

INFECTION AND SUPPURATION IN MELANOTIC TUMOURS. B. DUPERRAT. (1954) *Actas**dermo-sif., Madrid*, **45**, 231.

Occasionally, and more particularly on the face, pigmented naevi may increase in size and have an associated erythema. There is neither pain nor adenitis. On palpation there is a hard deep-seated oedema which pushes up the naevus. Such naevi always contain hairs and naevus cells

on hair follicles, which become distended and cystic. The induration and apparent increase in size of the naevus is due to a low grade infection of the cysts.

G. W. B.

MYCOBACTERIUM BALNEI. F. LINELL and A. NORDEN. (1954) *Acta Tuberculosea Scandinavica*, Supplement XXXIII.

In 1949-50 61 girls and 19 boys in a Swedish town acquired localised granulomatous skin lesions. Nineteen remembered that the affected site had been scratched at the swimming-pool about three weeks before the onset of the disease.

The careful investigations recorded in this account led to the conclusion that an acid-fast organism, christened *M. balnei*, had been acquired from the pool and was responsible for the lesions.

This bacillus was grown in cultures from three out of nineteen biopsies, and from the water and walls of the swimming-pool. It caused lesions in various laboratory animals; and in two human volunteers scratch-inoculation reproduced the naturally-occurring disease in all respects. Detailed laboratory study indicated that the organism had not been described before; it was probably not a degenerate form of *M. tuberculosis*. Although similar epidemics had been described in the past, no organism had been incriminated, a fact here attributed to its preference for growing in cultures at 31° C.; it would have been overlooked if sought by routine methods.

In vitro, it was sensitive to streptomycin, tyrothricin and isoniazid; it was resistant to para-aminosalicylic acid and thiosemicarbazone. Treatment of established lesions with Finsen light, calciferol and P.A.S. was not demonstrably effective.

The clinical course was fairly characteristic: two to three weeks after injury a small red papule was noticed, nearly always on the outside of the elbow. It increased slowly for about two weeks to the size of an unspecified bean (? 1-2 cm. diameter), becoming soft and spongy. A week or so later ulceration with a crusted crater appeared, started to heal after several months, and eventually left a scar which could be disfiguring. Adenopathy was infrequent and usually inconspicuous. In many cases the lesions were trivial and were not reported to a doctor; in some they suppurated and lasted up to two years. A few patients were infected twice at intervals of one to six months.

Two patients underwent Mantoux-conversion at or about the time of infection.

The authors mention a second epidemic from another town in Sweden, occurring in 1952 (Zettergren, 1952). The same bacterium was isolated, and here 24 patients underwent Mantoux-conversion about the time of infection; a number of unexplained positive tuberculin reactions had previously been found in the schools; no tuberculous disease or contacts were discovered on intensive investigation.

The histological appearance in humans and animals is described in detail: it is granulomatous, often resembling sarcoid, but sometimes indistinguishable from that of tuberculosis.

This report is a model of careful presentation. The argument is elaborated clearly and logically, the findings are discussed briefly but critically in the light of previous work, and there is ample evidence that the authors have sought the opinions of many other experts in many countries before embarking on the publication, which covers nearly 80 pages and quotes 109 references.

R. E. B.

SPESIFIK HUDAFFEKTION I ANSLUTNING TILL BAD I SIMBASSANG ("MYCOBACTERIOSIS BALNEAREA"). L. ZETTERGREN. (1952) *Svenska läk. tidning*, 49, 25.

VARIATIONS OF BODY TEMPERATURE AND VAGINAL SMEAR FINDINGS IN THE COURSE OF SOME SKIN DISEASE. A. AGOSTINI. (1954) *Arch. ital. Derm. Sif.*, 26, 90.

Records of variations of basal body temperature and cyclical changes seen in vaginal smears have for some time been used diagnostically in gynaecology and obstetrics. Its application in dermatology does not appear to be so obvious, but the author has gone to much trouble to try and establish some connection in 45 patients suffering from a variety of skin conditions. You then know whether to cure them with oestrin or progesterone.

D. S. W.

OBSERVATIONS ON THE L.E. PHENOMENON IN DIFFERENT TYPES OF LUPUS ERYTHEMATOSUS. L. RASPONI. (1954) *Arch. ital. Derm. Sif.*, 26, 121.

He divides his cases into acute, subacute, chronic (either widespread or erythematous and circumscribed discoid types).

He found L.E. cells in the peripheral blood in four of the five acute cases, in all the subacute cases (in an acute phase of the illness), and in all ten of his third group. Most of these cases were

highly sensitive to light and the numerous searches made for the cells were undertaken in the spring and summer, during the time when the skin lesions were active. Much more surprising are the nine positive findings in 20 cases of straightforward chronic discoid lupus, though these never amounted to more than three in a thousand white cells seen.

The search has in many cases been repeated and thorough; the criteria for the recognition of the L.E. cell seem acceptable; perhaps the stronger light in Italy induces more instability of the disease. Those interested should read this short article, where the clinical histories are lucidly recorded.

D. S. W.

STATISTICS ON THE CLINICAL FORMS OF LEPROSY IN GREECE, N. J. PHOTINOPOULOS.
(1954) *Dermatologica*, 109, 209.

Of 883 patients in the four State Leprosaria of Greece, 755 have been examined carefully and repeatedly by the author, and these form the basis of this survey, which, being essentially statistical, does not lend itself to summary. Results from treatment with the sulphone drugs have been good when these have been used properly, but in the author's opinion this has by no means always or even usually been the case.

J. F. S.

HYPERKERATOSIS FOLLICULARIS ET PARAFOLLICULARIS ATROPHICANS. C. H. BEEK.
(1954) *Dermatologica*, 109, 217.

Kyrle in 1916 described under the precise but ponderous title of "hyperkeratosis follicularis et parafollicularis in cutem penetrans" a peculiar case presenting multiple lesions, hyperkeratotic, with horny central plugs and underlying atrophy of the skin. In some lesions the horny masses had broken through the basal layer into the dermis, and had there set up a foreign-body reaction, with giant-cells. Kyrle's emphasis on this as an essential feature of his disease has in Beek's view been misleading, as the phenomenon can occur in other dermatoses, so that some of the cases reported under Kyrle's title are probably not true examples of it. Beek would accept only three others as identical with Kyrle's original case, and he thinks that the case which he here reports belongs to the same group, although in it there was no penetration by the horn-masses. His patient was a woman aged 50, and the eruption was extensive on both legs below the knees.

J. F. S.

EXPERIMENTAL RINGWORM OF THE COCK'S COMB AS A TEST-OBJECT FOR ANTIMYCOTICS. A. POLEMANN and R. SCHARFENBERGER. (1954) *Dermatologica*, 109, 137.

The authors have long felt the need for some more accurate method of assessing fungicides than either *in vitro* tests with cultures or therapeutic trials on natural infections in man, and believe that they have found such a method in the inoculation of the combs of cocks with *Trichophyton gallinae*. This organism is superior to human pathogens for this purpose, because infections with the latter have a strong tendency to spontaneous healing. They describe in detail their method of inoculation and the course of the infection, and express surprise that the outstanding advantages of the cock as an experimental animal have escaped notice for so long.

J. F. S.

CHROME DERMATITIS. G. HILT. (1954) *Dermatologica*, 109, 143.

This long, but fascinating article (in French), will repay reading in full, as no summary could do justice to its close reasoning. The author starts with an historical account of our knowledge of chromium dermatitis; emphasises that it is only hexavalent compounds that sensitize the skin; shows how they find their way into various trades and occupations where they might not be expected, such as cement handling and laundry work ("Eau de Javel"). He excludes, or at least gives a verdict of "Not Proven", to leather, because the chrome in it is not in the irritant form. He discusses methods of chemical analysis, to detect small quantities of the metal, and reaches the conclusion that there is probably much more chromium in cements (in France, Switzerland and Germany, at any rate) than has hitherto been thought. Discussing pathology, he refers to the inadequacy of our knowledge of experimental chromium dermatitis, and insists on the importance of the part played by alkalies. In treatment, he uses mostly coal tar, but has recently tried B.A.L., as suggested by Cole, and in two cases with fissured and hyperkeratotic dermatitis found it rapidly successful. He has tried to elaborate a protective cream, and thinks he has succeeded, but much more work is needed before he can present this to the public. He has also experimented with attempts at desensitization by intradermal injection of increasing amounts of potassium dichromate. This work is to be the subject of a further communication.

J. F. S.

HORMONE ESTIMATIONS IN THE URINE OF PATIENTS WITH ACNE VULGARIS. P. KOOLJ, E. DINGEMANSE, L. G. HUIS in t'Veld, A. M. J. A. VERBEEK and W. J. HOFMAN. (1954) *Dermatologica*, **109**, 175.

Estimation of the absolute amounts of 17-ketosteroids and oestrins, and of their ratios one to another, were carried out on 30 men and 18 women suffering from acne vulgaris, and on 35 normal men and 26 normal women as controls. In neither the 17-ketosteroids nor the oestrins was there any suggestion of a difference between the acne patients and the controls. J. F. S.

LUPUS ERYTHEMATOSUS. G. B. DOWLING. (1954) *Practitioner*, **173**, 140.

An excellent summary of our present knowledge of lupus erythematosus considering the clinical features of both cutaneous and systemic lupus erythematosus, their morbid anatomy, prognosis and treatment. Mepacrine is given pride of place in the treatment of the chronic cutaneous disease and credit for its introduction given to Prokoptchouk in 1941. Chloroquine is mentioned, results being said to be similar to what can be expected from mepacrine, though perhaps with a somewhat higher proportion of complete failures. In the treatment of systemic lupus erythematosus the steroid hormones are the only treatments of real value, although not curative; the interruption of a rapidly fatal course in the disease is now possible and patients under continuous treatment are not chronically ill—they can often work. It seems clear that however completely symptoms may be suppressed the disease usually goes on. A. C. R.

HORMONE COSMETICS. SAMUEL M. PECK and EMIL G. KLARMANN. (1954) *Practitioner*, **173**, 159.

It is the consensus of opinion among experienced observers that cosmetic oestrogenic hormone creams with a maximum potency of 10,000 i.u. per ounce of vehicle, if used in the manner recommended by the informed manufacturer, are free from systemic effects. It is also established that, to date, there has been no evidence of precancerous or cancerous changes in the skin resulting from the use of these hormone cosmetics over a period of several years.

There is definite support for the anti-wrinkling effect produced by the use of hormone cosmetics, based upon (a) the thickening of the epidermis, (b) the plumping of the collagen fibres. The anti-wrinkling action of hormone creams is more noticeable in older people. A. C. R.

SCLERODERMA AND DERMATOMYOSITIS. JAMES SOMMERVILLE. (1954) *Practitioner*, **173**, 151.

A summary of our knowledge of scleroderma and dermatomyositis considered under the headings of localized scleroderma, diffuse scleroderma, acrosclerosis and dermatomyositis. The author has found that tablets of H.P.C. (3-hydroxy-2-phenylcinchoninic acid) of 250 mg. each, up to 6 daily, caused a distinct improvement in many cases of morphea. In dermatomyositis he links cortisone and ACTH hold out hope for the victim, especially in acute cases. A. C. R.

SCRATCH TESTS IN THE ECZEMAS OF CHILDHOOD. JOHN H. S. PETTIT. (1954) *Practitioner*, **173**, 169.

A series of 103 cases of infantile and atopic eczema was investigated by scratch tests with egg, milk and cereal. This investigation confirms previous reports that the scratch test to injected allergens is of no use in the investigation of the eczemas of childhood. While children under the age of three showed a positive reaction to egg, in 50% of cases this sensitivity disappeared naturally and had no significance after the age of three. A. C. R.

THE VALUE OF ANTIHISTAMINES IN THE TREATMENT OF URTICARIA. R. P. WARIN. (1954) *Practitioner*, **173**, 166.

In chronic urticaria, prolonged antihistamine therapy neither shortens nor prolongs the period at the urticarial tendency is present, nor has it any disadvantage or danger. The majority of patients are much relieved and there is no reason why they should not be treated.

Giant urticarial swellings are not affected to the same extent as dermal urticaria but the majority of patients have a reduction in the frequency, number and size of their swellings.

In acute urticaria, even large doses of an antihistamine are sometimes ineffective, but there is evidence that there are any disadvantages or dangers in this treatment which can, if necessary, be supplemented by adrenaline and other measures.

Papular urticarial wheals can be reduced by antihistamines. Therapy should be reserved for cases in which the wheals do not respond to simple measures or have been present for a long time. A. C. R.

POLYARTERITIS NODOSA. HENRY MILLER. (1954) *Practitioner*, 173, 133.

The keynote of the disease is toxicity and multiple infarction and, if this feature is remembered, it will clarify many mysterious illnesses, the widely-scattered signs of which defy any alternative explanation. The classical studies of Arnold Rich at Johns Hopkins Hospital showed that the basic lesion of polyarteritis nodosa is an allergic-inflammatory focal swelling of the vessel wall analogous with the wheal of urticaria, a non-specific hypersensitive response to a variety of antigens. The common mode of presentation is as a pyrexia of unknown origin, unresponsive to antibiotics and often associated with minor symptoms or signs indicating the presence of a generalized inflammatory disease, e.g. joint pains, abdominal pain, hypertension, intermittent haematuria or asymmetrical and inexplicable neurological signs. The histopathological changes of polyarteritis nodosa are far from specific. Apparently identical vascular changes are seen in serum sickness, anaphylactoid purpura, acute rheumatism, rheumatoid arthritis, temporal arteritis, thromboangiitis obliterans, glomerulonephritis, scleroderma, dermatomyositis, erythema nodosum and disseminated lupus erythematosus, and in sections of brain in the encephalitis which follows measles or vaccination. That such change is not necessarily allergic is strongly suggested by the fact that similar changes are seen in the experimental hypertension produced by clamping the renal arteries. Some cases improve on penicillin injections and others on salicylates. In acute cases, cortisone is the treatment of choice but, in sub-acute and chronic cases, its value is now more open to question.

A. C. R.

PROLONGED THERAPY WITH CORTISONE FOR CHRONIC SKIN DISEASES. M. B. SULZBERGER and V. H. WITTEN. (1954) *J. Amer. med. Ass.*, 155, 954.

A valuable report on the management of 35 patients who received cortisone for periods of two months to three years. There was no evidence of acquired drug resistance and, although some patients came to depend on cortisone, there was no addiction. In many cases the disease could be kept under control while the dosage was progressively reduced. Careful and regular supervision is essential. The conditions treated included, among others, atopic dermatitis (15 cases), psoriasis, nummular eczema and pemphigus. If adequate precautions are taken the prolonged administration of cortisone will lengthen the lives of some patients and control the incapacitating symptoms of others.

A. J. R.

EFFECT OF ESTERS OF PARAHYDROXYBENZOIC ACID ON CANDIDA AND YEAST-LIKE FUNGI. W. I. METZGER, L. T. WRIGHT and J. C. DiLORENZO. (1954) *J. Amer. med. Ass.*, 155, 352.

In the first part of this paper the authors, on the strength of their own observations and of recent publications, conclude that the relationship of *Candida albicans* to the local manifestations after antibiotic therapy is still uncertain. Investigations on the antiyeast activities of methylparaben and propylparaben are then described.

A. J. R.

LUPUS ERYTHEMATOSUS-LIKE SYNDROME COMPLICATING HYDRALAZINE (APRESOLINE) THERAPY. D. J. REINHARDT and J. M. WALDRON. (1954) *J. Amer. med. Ass.*, 155, 1491.**SYNDROME SIMULATING ACUTE DISSEMINATED LUPUS ERYTHEMATOSUS.** N. H. SHACKMAN, A. I. SWILLER and M. MORRISON. (1954) *J. Amer. med. Ass.*, 155, 1492.

Hydralazine (Apresoline) is used to treat hypertension. These two short reports describe two examples of a syndrome resembling acute disseminated lupus erythematosus induced by this drug. In the first patient migratory joint pains, a subcutaneous nodule histologically of rheumatoid type, leucopenia and L.E. cells in the peripheral blood were interesting features. The second patient who had received Hydralazine for nine months showed fever, malaise, leucopenia, L.E. cells and positive serological tests. All signs and symptoms had regressed a month after the drug was discontinued.

A. J. R.